S. HRG. 100-334, PT. 2

RIO CHAMA RIVER, NEW MEXICO

HEARING

BEFORE THE

SUBCOMMITTEE ON
PUBLIC LANDS, NATIONAL PARKS AND FORESTS

OF THE

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

ON

S. 850

TO AMEND THE WILD AND SCENIC RIVERS ACT TO DESIGNATE A SEGMENT OF THE RIO CHAMA RIVER IN NEW MEXICO AS A COMPONENT OF THE NATIONAL WILD AND SCENIC RIVERS SYSTEM

DECEMBER 17, 1987

PART 2

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RIO CHAMA RIVER, NEW MEXICO

THURSDAY, DECEMBER 17, 1987

U.S. SENATE,
SUBCOMMITTEE ON PUBLIC LANDS,
NATIONAL PARKS AND FORESTS,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:02 p.m., in room SD-192, Dirksen Senate Office Building, Hon. Jeff Bingaman, presiding.

OPENING STATEMENT OF HON. JEFF BINGAMAN, A U.S. SENATOR FROM THE STATE OF NEW MEXICO

Senator BINGAMAN. The purpose of the hearing today is to receive testimony on a measure that is currently pending before the Subcommittee on Public Lands, National Parks and Forests. The measure is S. 850, which is a bill to amend the Wild and Scenic Rivers Act to designate a segment of the Rio Chama in New Mexico as a component of the National Wild and Scenic Rivers System. We had a field hearing on this in New Mexico on July 27.

I have got a long statement here explaining some of the background of it, but I will forgo that so we can get on with the testimony here. I know my colleague, Senator Domenici, has to get on to another conference, so let me defer to him first and then we will get on with the witnesses, the first one being Congressman Richardson.

[The prepared statement of Senator Bingaman follows:]

STATEMENT BY THE HONORABLE JEFF BINGAMAN

The purpose of the hearing this afternoon is to receive testimony on a measure currently pending before the Subcommittee on Public Lands, National Parks and Forests. The measure is S. 850, a bill to amend the Wild and Scenic Rivers Act to designate a segment of the Rio Chama River in New Mexico as a component of the National Wild and Scenic Rivers System. A field hearing was held on this measure before this Subcommittee in Santa Fe on July 27, 1987.

The Rio Chama, located in northern New Mexico, possesses outstanding natural, ecological, and recreational characteristics which deserve the protections afforded by the Wild and Scenic Rivers Act.

In 1977, the New Mexico legislature designated this portion of the Rio Chama as the State's only "Scenic and Pastoral River". The State Act encourages eventual wild and scenic designation which this bill will accomplish.

Specifically, this legislation would protect a 31 mile section of the Rio Chama, beginning at a point just downstream from El Vado Dam, and extending to elevation 6283.5 feet, the upper limit for flood control and authorized permanent storage of 200,000 acre feet at Abiquiu Reservoir.

I know that concerns have been raised that the bill as introduced could have the practical effect of preventing the maximum storage of water at Abiquiu Reservoir. Needless to say, none of us has any desire to jeopardize any compelling need for water supply in New Mexico. The intent of this bill is simply to recognize the recreational, scenic and wildlife values of a portion of the Rio Chama and to ensure that those values will weigh heavily in any future decisions regarding the reservoir and the river. I think the testimony from our field hearing demonstrated that there are alternatives that allow us to provide needed water for our citizens and farms without sacrificing our finest recreational and scenic resources.

I also am sensitive to the concerns raised by the residents of the Espanola valley regarding the recreational potential of the Abiquiu Reservoir. In response to these concerns, I successfully offered an amendment to the Energy and Water Appropriations bill to provide funds to the Corps of Engineers to prepare a revised recreation plan for the reservoir. I hope this plan will result in increased recreational opportunities for this area.

This proposal has the overwhelming support of environmental groups and recreation enthusiasts across New Mexico. Many New Mexicans believe that Federal preservation of the Rio Chama is

long overdue. On the basis of this river's extraordinary geological, ecological, archeological, and recreational features, I strongly support Wild and Scenic River designation for Rio Chama.

I understand the agency witnesses will offer recommendations today for improving the management of the Rio Chama under the Wild and Scenic designation. I look forward to working with the agencies in making sure this legislation is enacted.

STATEMENT OF HON. PETE V. DOMENICI, A U.S. SENATOR FROM THE STATE OF NEW MEXICO

Senator DOMENICI. Thank you, Mr. Chairman, Congressman Richardson.

Let me first say to you, Mr. Chairman, in the presence of Congressman Richardson, about an hour ago we sent over the El Malpais bill, so I am very hopeful, as you have been in the past, that even if we only have 36 hours left, that Congressman Richardson will see to it that the House passes it.

I am very grateful to everyone who has helped. I think it is an excellent and exciting bill, and thank you, Bill, for your leadership and for yours, Jeff. I am pleased that we have got that done. I believe it will get signed. I know our Indian brothers are a little angry about it, but I really think we have done everything we can.

Mr. Chairman, I have a series of correspondence that I believe has been shared with you, but if you do not have it, it is an oversight on our part. I would ask that the correspondence be made a part of the record. They are from the Bureau of Land Management, Conservation Trust, State Engineer's office, et cetera, and I think they are only helpful with reference to our final evaluation.

Senator BINGAMAN. Okay. Those will all be made part of the record.

Senator DOMENICI. Now, Mr. Chairman, it is not my custom to read a statement, but I think it will be better for me, and probably serve the record better, than for me to ramble. So let me just say that I join you in welcoming the witnesses. You and our witnesses know of my support, as well as my concern, for this legislation. I am a cosponsor. I support the basic thrust of the legislation with enthusiasm.

Yet I have said from the beginning that I have had some reservations about the wild and scenic designation on a small stretch of the river. These are reservations that I am absolutely confident we must address before we pass Senate bill 850 because the current wording of S. 850, in my opinion, could threaten the water supply of Albuquerque and other parts of New Mexico.

There is no dispute over designating the Rio Chama as wild and scenic from an elevation of 6,353 feet upriver to the El Vado Damn. As to that, I have no reservations and no concern.

Nor is there any problem with managing the Rio Chama for wild and scenic purposes below the elevation of 6,283.5 feet, so long as it is clear that the existing uses and practices of the Corps for flood management and other beneficial purposes are protected fully.

The record of our hearing in Santa Fe last July shows that Senator Bingaman, Congressman Richardson, and I agreed that the management regime in the bill must be redrafted to give the Corps of Engineers the primary responsibility for that management. To do otherwise, it seems to me, would create a dangerous conflict among the agencies and responsibilities.

The key uncertainty, then as now, involves the four miles of the Rio Chama between these two points—6,283.5 feet and 6,353 feet. The lower elevation marks the top of the pool behind Abiquiu Dam when it contains about 554,000 acre-feet of water. The higher eleva-

tion is the one that would contain the absolute maximum reservoir of more than 1,200,000 acre-feet.

So as we evaluate the legal regime of this stretch of the Rio Chama I believe one point must be made, followed by three key questions.

The point is that there is no argument on my part, or anyone's part that I know of, that this stretch of river should be operated and maintained for wild and scenic purposes, possibly forever. But operating and managing may have far different consequences to designating it wild and scenic.

My questions center on what happens in the alternative if we should designate those four miles as wild and scenic river.

First, how do we handle the 200,000 acre-feet of San Juan-Chama water owned by Albuquerque and other cities? That water is now stored by law in Abiquiu Reservoir. This is water that under the bill, as now drafted, could be spilled and essentially given away to Texas, should all of the flood control space in Abiquiu Reservoir be needed in a period of unusually heavy flooding.

At a minimum, I believe, we must make certain that no wild and scenic river plan is adopted that could be used under any circumstances to force Albuquerque to dump water it has already purchased and stored for its future.

I might say that if the water was not dumped, it would back into the wild and scenic management area for a very short period of time, because we are going to let the flood water out sooner or later. Consequently, there would be just a short time during which you might back water into that four miles of protected river. Yet you could force Albuquerque to dump some or all of its water.

Second, is there a likely need for additional storage over and above the 754,000 acre-feet now authorized? I must say to you, Mr. Chairman, that I do not know the answer to that. No one seems to. I have asked State and city officials. Their answers are uncertain. So what do we do?

Do we lock up that storage and forget about it? Or do we leave open the possibility for additional storage in case Congress considers it important to pass legislation authorizing additional storage?

In a letter to me on this issue, Secretary Tom Bahr of the New Mexico Department of Energy, Minerals, and Natural Resources, made a number of points. One of them is this: "In a water-short State, the presumption should be that we will need more storage, not the other way around."

If there is disagreement, if there is uncertainty, should a water-short State rush to judgment and lock away this potential storage?

My third question is this: What is the legal, as well as the psychological, impact elsewhere in the State of our decision on those four miles? Again, Mr. Chairman, I raise this because of what I see as the potential impact of our decisions on water issues, such as El Paso's desire to obtain water in southern New Mexico.

I am not sure this is a legal issue, but a key argument that El Paso has always made in its legal briefs is, and I quote from one of their briefs, "There is more than enough fresh water" in New Mexico to "meet all foreseeable needs for centuries."

If we pass this bill, are we in any way endorsing their position and strengthening their case for its taking of New Mexico water?

We can say we are not affecting that issue, but I think we need to tread very carefully. We cannot afford to make a mistake in this regard.

In his letter, Secretary Bahr reinforced this concern. By precluding additional surface water storage in New Mexico, he said, "we will be playing into the hands of the City of El Paso in their desire to obtain New Mexico groundwater. For us to deliberately preclude new storage at an existing facility could be construed"—and I stress the word "could"—"by El Paso, or any other out-of-State appropriator for that matter, that we do not have a need for the additional water that this storage would afford, no matter how little it might be."

Mr. Chairman, I believe the solution to this issue is simple. I am hopeful we can come up with it, to protect the interests of the rafters and leave the question of any additional storage to be debated as a New Mexico issue, recognizing that Congress would have to authorize any additional storage.

So I believe we should give serious consideration to modifying S. 850 to declare the Rio Chama from El Vado Dam to 6,353 feet, 25 miles, as an official part of the scenic river system, and that the 5.7 miles of river below that elevation should be managed by the Corps of Engineers, in cooperation with the Forest Service and the Bureau of Land Management, as if it were a wild and scenic river, recognizing other authorized and beneficial uses.

Now there may never be a need for this additional storage at Abiquiu, as proponents argue. And it may have to be studied for safety in the event we are going to add. And Congress would have to vote the additional authorization. Indeed, under current law there would be a very heavy price tag placed on the City of Albuquerque or anyone who wanted to add that under the cost-sharing regime that exists today.

If that is the case, wild and scenic management will be just as sound protection as the official designation. But if they are wrong, if there is a water need and the city can justify it to Congress, then action now to maintain some flexibility could prove vital to the future of New Mexico.

I believe while we should act, we surely should be sure we do not act with haste.

There are some technical issues that I will not elaborate on that I think your staff and mine and Congressman Richardson's staff are looking at. I am sure we can discuss those in due course.

I thank you very much, Mr. Chairman.

[The prepared statement and additional material submitted by Senator Domenici follows:]

COMMITTEE STATEMENT

SENATOR PETE V. DOMENICI

S. 850, Rio Chama Wild and Scenic legislation

Subcommittee on Public Lands, National Parks, and Forests

Thursday, December 17, 1987

2 p.m.

Mr. Chairman, I join you in welcoming our witnesses.

You and our witnesses know of my support, as well as my concern, for this important legislation. I am a cosponsor. I support the basic thrust of this legislation with enthusiasm.

Yet I have serious reservations over a "wild and scenic" designation on a small stretch of the river. These are reservations we must address before we pass S. 850 because the current wording of S. 850 threatens water supplies for Albuquerque and other areas of New Mexico.

There is no dispute over designating the Rio Chama as wild and scenic from the elevation of 6,353 feet upriver to El Vado Dam. I support such a designation with enthusiasm.

Nor is there any problem with managing the Rio Chama for wild and scenic purposes below the elevation of 6,283.5 feet, so long as it is clear that existing uses and practices of the Corps of Engineers for flood management and other beneficial purposes are protected fully.

The record of our hearing last July in Santa Fe shows that Senator Bingaman, Congressman Richardson, and I agreed that the management regime in the bill must be redrafted to give to the Corps of Engineers the primary responsibily for that management. To do otherwise would create a dangerous conflict among agencies and responsibilities.

The key uncertainty --- then as now --- involves the 4 miles of the Rio Chama between those two points of elevation (6,283.5 feet and 6,353 feet.) The lower elevation marks the top of a pool behind Abiquiu Dam when it contains about 554,000 acre-feet of water. The higher elevation is the one that would contain the absolute maximum reservoir of more than 1,200,000 acre-feet.

As we evaluate the legal regime for this stretch of Rio Chama, I believe one point must be made, followed by three key questions.

The point is that there is no argument on my part, or anyone's part that I know of, that this stretch of river should be operated and maintained for wild and scenic purposes, possibly forever. But operating and managing may have far different consequences to designating it wild and scenic.

My questions center on what happens in the alternative, if we should designate those 4 miles as wild and scenic.

First, how do we handle the 200,000 acre-feet of San Juan Chama water owned by Albuquerque and other cities? That water is now stored by law in Abiquiu Reservoir. This is water that under the bill, as now drafted, could be spilled, and essentially given away to Texas, should all of the flood control space in Abiquiu Reservoir be needed in a period of unusually heavy flooding.

At a minimum, I believe, we must make certain that no wild and scenic river plan is adopted that could be used under any circumstances to force Albuquerque to dump water water it has already purchased and stored for its future.

Second, is there a likely need for additional storage over and above the 754,000 acre-feet of storage now authorized?

I don't know the answer to that. No one seems to. I have asked state and city officials. Their answers are uncertain. So what do we do? Do we lock up that storage and forget about it, or do we leave open the possibility for additional storage in case Congress considers it important to pass legislation authorizing additional storage?

In a letter to me on this issue, Secretary Tom Bahr of the New Mexico Department of Energy, Minerals, and Natural Resources, made several important points. One of them is this:

"In a water short state, the presumption should be that we will need more storage, not the other way around."

If there is disagreement, if there is uncertainty, should a water-short state rush to judgment and lock away this potential storage?

My the third question is this: What is the legal, as well as the psychological, impact elsewhere in the state of our decision on those 4 miles? I raise that because of what I see as the potential impact of our decisions on water issues such as El Paso's desire to obtain water in southern New Mexico.

A key arguments that El Paso has made in its legal briefs is that "there is more than enough fresh water" in New Mexico to "meet all foreseeable needs for centuries."

If we pass this bill, are we endorsing El Paso's position and strengthening its case for its taking New Mexico water? We can say we are not affecting that issue, but I think we need to tread very carefully. We can't afford to make a mistake with New Mexico's future.

In his letter, Secretary Bahr reinforced this concern. By precluding additional surface water storage in New Mexico, he said, "we will be playing into the hands of the City of El Paso in their desire to obtain New Mexico groundwater....For us to deliberately preclude new storage at an existing facility could be construed by El Paso, or another other out-of-state appropriator for that matter, that we do not have a need for the

additional water that this storage would afford, no matter how little it might be."

Mr. Chairman, I believe the solution to this issue is simple. It protects the interest of the rafters and leaves the question of any additional storage to be debated as a New Mexico issue, recognizing that Congress would have to authorize any additional storage.

Specifically, I believe we should give serious consideration to modifying S. 850 to declare the Rio Chama from El Vado Dam down to an elevation of 6,353 feet --- a distance of some 25 miles --- an official part of the national system of wild and scenic rivers.

The 5.7 miles of the river below that elevation should be managed by the Corps of Engineers, in cooperation with the Forest Service and the Bureau of Land Management, as if it were a wild and scenic river, recognizing other authorized and beneficial uses.

There may never be the need for additional storage at Abiquiu, as proponents argue. If that is the case, wild and scenic "management" will be just as sound protection as an official designation.

But if they are wrong, if there is a water need the state and city can justify to Congress, then action now to maintain some flexibility could prove vital to the future of New Mexico.

I believe we should act with care, not haste.

Mr. Chairman, I would also note a few technical issues that have also arisen since we introduced the bill. There is a need to add language protecting some inholdings upriver, inholdings that I understand everyone wants to protect. And there is a need to assure there would always be recreational water stored in Abiquiu Reservoir.

A third point is the actual river miles listed in the bill. A letter to my staff from Lt. Col. Kent R. Gonser, the Albuquerque District Engineer, points out that a careful examination of the land shows that it is 44.4 miles from the El Vado launch site to Abiquiu Dam, and that it is 15.5 miles from the Dam upstream to elevation 6,283.5 feet. Thus, even if we adopt the bill as is, we must change the number of river miles to 28.9 miles from the 30.75 miles now listed.

Mr. Chairman, I look forward to working with you to pass a bill that will achieve only positive results for New Mexico.

To help clarify some of these points, I submit for the record a number of letters and other documents that have been sent to me subsequent to our July hearing. I believe each offers important information for our deliberations.

J. BENNETT JOHNSTON, LOUISIANA, CHAIRMAN
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United States Senate
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
WASHINGTON, DC 20510-6150

August 10, 1987

Mr. Larry Woodard
State Director
Bureau of Land Management
P.O. Box 1449
Santa Fe, NM 87504-1449

Dear Larry:

Thank you for taking the time to testify at the Senate Energy and Natural Resources Hearing on the Rio Chama on July 27, 1987. We were pleased with the excellent testimony presented by all interested groups.

Given the numerous issues involved, increasing dam safety and water supply and water storage and the variety of viewpoints presented, we felt it would be useful to supplement the official hearing record with any additional comments or evidence you would like to submit on those issues and viewpoints.

There was a great deal of testimony related to the question of future water supply issues. Further information related to the following questions would be useful.

1. What information is available on the water needs of the City of Albuquerque and the State over the next three or four decades? How much of that need can be met through conservation initiatives? What are those initiatives and proposals?

2. What is the City of Albuquerque doing, or what can we expect to be done, to undertake alternative methods of storage, such as ground water recharge? How much of the need can be met through these alternative types of storage? What are the costs and what are the benefits related to these alternatives and what are any potential problems?

3. What comprehensive planning has the City or State conducted relative to future water needs? What is or should be done to examine alternative sites to

surface storage? Do reservoirs and aquifers provide the potential for water storage? What alternative sites have been identified?

We hope that you can provide useful information related to these important questions or any other issue raised at the hearing.

Please provide this information to each of us, as well as to the U.S. Senate Energy and Natural Resources Committee. Your cooperation is appreciated.

Sincerely,

Pete V. Domenici
United States Senator

Jeff Bingaman
United States Senator

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

August 12, 1987

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503

The Honorable Pete V. Domenici
United States Senator
434 Dirksen Senate Office Bldg.
Washington, D. C. 20510

Dear Senator Domenici:

Near the close of the hearings on S.850 (a bill to designate a segment of the Rio Chama as a component of the National Wild and Scenic River System) in Santa Fe on July 27, you said that the more you heard the more you didn't understand the concern of state and city officials and that the arguments against protecting the river were so vague and so hypothetical that those officials should take more time to document their case. I am pleased that you have invited the further comment on S.850 that I offer here.

The Rio Grande Compact's rigorous limitations on the operation of storage reservoirs constructed in New Mexico between Lobatos and San Marcial after 1929 make the utility and economic justification of additional conservation storage capacity for Rio Grande system water on the Rio Chama, or elsewhere above San Marcial, extremely marginal at best.

Under present circumstances, the entities that have entered long-term contracts with the Secretary of the Interior for San Juan Chama Project water do not yet have need for the full amount for which they have contracted. As a consequence, the regulatory storage of the San Juan-Chama Project (Heron Reservoir with a capacity of 400,720 acre-feet) has been nearly full for several years. It has been necessary for the Bureau of Reclamation in operating the Project to bypass divertible flow at the diversion works of the San Juan-Chama Project, allowing New Mexico's Upper Colorado Basin Compact allocation of water to flow down to the Lower Basin. Enactment of Public Law 97-140, which you sponsored, has made it possible to keep 200,000 acre-feet of that allocation in Abiquiu Reservoir. At this time the Middle Rio Grande Conservancy District, the City of Albuquerque, the City of Santa Fe, the Department of Energy (Los Alamos), Taos, Espanola

and Twining have a total of 187,100 acre-feet in storage in Abiquiu Reservoir. Of that amount about 170,000 acre-feet is the property of the City of Albuquerque.

Storage of San Juan-Chama Project water in Abiquiu Reservoir gives those who have contracted for that water the advantage of a supply that they can sell under short-term contract to defray a part of the cost incurred under their contracts with the Secretary of the Interior. That storage also provides excellent flat-water recreation on Abiquiu Lake. Col. Gonser, District Engineer for the Albuquerque District of the Corps of Engineers, has advised that Abiquiu Reservoir attracted 733,000 visitor days in 1986. That visitation may be compared to the 3,000 visitor days reported for the reach above Abiquiu Reservoir by the Bureau of Land Management.

There is an immediate need for additional conservation storage capacity for San Juan Chama Project water in Abiquiu Reservoir. But the estimated cost of $22 per acre-foot per year for that capacity cannot be economically justified because of the limited and uncertain demand for water under short-term contract. In this connection, it is critically important to note that the need for conservation storage capacity in Abiquiu Reservoir for San Juan-Chama Project water will decline with time as the water requirements of those contracting for that water grow and the water is applied to the uses for which it was contracted.

The important public benefits demonstrated by the visitation at Abiquiu Reservoir indicate economic justification for payment for those benefits by some entity or entities other than those contracting for San Juan-Chama Project water. It is important to note that as the need for storing imported water in Abiquiu Reservoir declines recreation benefits will also decline.

There was testimony at the hearing that the storage of San Juan-Chama Project water long before the time it is needed for the uses for which it was contracted allows wasteful evaporation. Under both state and federal Law, this is, of course, quite incorrect. Recreation is a recognized beneficial use, and it seems clear that the imported water presently stored in Abiquiu Reservoir provides very substantial public recreation benefits. From New Mexico's perspective, allowing the water to go to the Lower Colorado River Basin can more appropriately be termed "wasteful", particularly when we are delivering more water to Mexico than the Treaty requires, and more than Mexico can use.

There was also extensive testimony critical of the management of San Juan-Chama Project water. As I recall, the testimony was that evaporation could be avoided by simply taking the

imported water from the river and injecting into the aquifer from which the City of Albuquerque draws its supply. My office has made no economic analysis of that measure, but its merit is highly questionable. It would be necessary to thoroughly desilt the water to avoid plugging the injection wells, to construct extensive works and expend costly electric energy to convey the water to the injection wells. The benefits of the injection would be so long delayed that the present worth of the benefits of the investment would be quite small.

Perhaps as critical is the fact that the water recharged by injection could not be retained in the aquifer. The increased hydrostatic head would increase the discharge from the aquifer to the river. The increased discharge could logically be accounted as San Juan-Chama Project water by the Colorado River Basin states or as Rio Grande System water by the Rio Grande Basin states. Under the latter accounting, 43% of the increased discharge that reached Elephant Butte Reservoir would be used on the Rio Grande Project in Texas. Under the former accounting, New Mexico would be in violation of the Colorado River Compact and the Upper Colorado River Basin Compact. Under either accounting, there would be no benefit to the City of Albuquerque to justify the cost of recharging the aquifer; and costly litigation before the U. S. Supreme Court would be likely.

I am in full accord with your statement in the Congressional Record of March 26, 1987, "... that attempting to undo a wild and scenic designation will prove an impossible task." The attached draft transcript of the statement presented by Mr. Wallin, an officer of the Rio Chama Preservation Trust, in Espanola on April 13, 1987, makes clear that he shares that view and that making the task impossible, "... is exactly our intention."

I am aware of no opposition to making most of the segment of Rio Chama between El Vado Dam and Abiquiu Dam a part of the National Wild and Scenic River System for the benefit of rafting enthusiasts. The real issue seems to be whether the downstream four miles of the segment proposed to be designated by S.850 is in fact, "the heart and soul of this bill." I respectfully suggest that that issue could be fairly and wisely compromised by giving deference to state law by adopting the amendment proposed at page 5 of the statement I filed at the hearing on July 27. A copy of that statement is attached for your convenient reference.

Sincerely,

S. E. Reynolds
State Engineer

SER:pt
Attachment

Statement on S.850

A bill to designate a segment of the Rio Chama River in New Mexico as a component of the National Wild and Scenic Rivers System.

Presented July 27, 1987
in
Santa Fe, New Mexico

Mr. Chairman, my name is S. E. Reynolds. I am New Mexico State Engineer.

Section 1 of S.850 would designate the segment of Rio Chama from the El Vado Ranch launch site immediately south of El Vado Dam downstream approximately 31 miles to elevation 6283.5 feet above mean sea level as a component of the National Wild and Scenic Rivers System. The downstream nine miles of the segment would be administered as a scenic river and the upstream 22 miles would be administered as a wild river.

Section 2 of the bill would require management of the river from elevation 6283.5 to elevation 6235, a distance of about 1.7 miles, in a manner similar to that required for a scenic river.

The downstream 4.0 miles of the river segment to be designated by Section 1 of the bill would be below the elevation of the spillway crest of Abiquiu Dam, that is within Abiquiu Reservoir and thus subject to inundation if and when the reservoir fills and spills.

At elevation 6283.5, Abiquiu Reservoir contains 555,000 acre-feet which is the volume necessary to contain the authorized 502,000 acre-foot flood control pool and the remaining 53,000 acre-feet of the authorized sediment control pool. At elevation 6235, the lowest elevation of the reach that would be managed by

the Bureau of Land Management and the Forest Service in a manner similar to that required for the management of a scenic river, the capacity of Abiquiu Reservoir is 259,000 acre-feet, an amount little more than sufficient for the sediment pool and the 200,000 acre-feet of San Juan-Chama Project water authorized to be stored in Abiquiu Reservoir by Public Law 97-140.

The currently authorized purposes of Abiquiu Reservoir include 555,000 acre-feet for sediment and flood control and 200,000 acre-feet for the storage of San Juan-Chama Project water for a total of 755,000 acre-feet. Abiquiu Reservoir is capable of storing that amount of water at elevation 6307. That elevation is a distance of about 1.4 miles upstream of elevation 6283.5, the termination of the wild and scenic river to be designated by Section 1 of the bill.

The last paragraph of Section 2 of the bill would provide: "Nothing in this section shall be construed to prohibit operation of Abiquiu Dam for purposes authorized by law as of the date of enactment of this Act."

Consonance with the last paragraph of Section 2 of the bill would seem to require that the wild and scenic river to be designated by Section 1 terminate at no further downstream than elevation 6307.

The segment of Rio Chama to be designated by the bill as wild and scenic is virtually fully regulated. For that reason some may find it difficult to fit it into the usual concept that a "wild" river is free-flowing. Nonetheless, carefully arranged releases from El Vado Reservoir provide opportunity for rafting.

In an arid land any water-based recreation is particularly attractive. The rafting opportunity provided by releases from El Vado Reservoir nicely supplements the excellent flat-water recreation on the beautiful blue lake created by conservation storage in Abiquiu Reservoir.

A Corps of Engineers study shows that the recent modification of the Abiquiu Dam and Reservoir Project would make it possible to dedicate an additional 467,000 acre-feet of the 1,201,500 acre-feet of capacity below the spillway crest of Abiquiu Dam to conservation storage without detriment to the flood and sediment control purposes of the project. That dedication would, of course, require Congressional authorization.

Enactment of S.850 would most likely preclude forever use of Abiquiu Reservoir for any purpose not presently authorized. In fact, an April 13, 1987, statement of an officer of the Rio Chama Preservation Trust makes clear that that is the intent of the Trust's support of legislation such as S.850.

I am not able at this time to specify any water user or group of water users who need and are prepared to pay the cost of reallocating the capacity of Abiquiu Reservoir for conservation storage under the terms of Public Law 99-662 that was enacted last year. At a lower cost, the City of Albuquerque could use additional conservation space in Abiquiu Reservoir for the storage of San Juan-Chama Project water that the City has contracted for but does not yet need for its municipal water supply system. Water thus stored could then be sold by the City to

defray a part of its cost of acquiring the water under contract with the Secretary of the Interior.

Under the right cost and hydrologic conditions the Middle Rio Grande Conservancy District could use space in Abiquiu Reservoir to store its share of San Juan-Chama Project water, as could other entities that have contracted for San Juan-Chama water.

A week ago today, a representative of an association of Rio Chama community ditches expressed interest in contracting for water from the San Juan-Chama Project and storing it in Abiquiu Reservoir to provide a reliable water supply for the community ditches on Rio Chama below Abiquiu Reservoir.

An amendment of Public Law 99-662 could make it financially feasible for San Juan-Chama Project water users to make good use of additional storage capacity in Abiquiu Reservoir.

In the last four years there has been an abundant water supply in the Rio Grande Basin; but even those with only brief experience in the management of water in an arid state know that the next drought will be here too soon. And they understand that usable conservation storage capacity should not be given up except for most compelling reasons.

I am constrained to point out that New Mexico's El Rio Chama Scenic and Pastoral Act, which designated about 30 miles of Rio Chama below El Vado Dam as a scenic and pastoral river, provides in paragraph E. of Section 16-4-6:

> Nothing in El Rio Chama Scenic and Pastoral Act shall be construed as being incompatible with existing state property

laws. Nothing shall be construed to be incompatible with regulation of river flow for flood control or beneficial uses of water.

I respectfully suggest that deference be given State law by amending the last sentence of Section 2 of S.850 to read as follows:

Nothing in this act shall be construed to be incompatible with the operation of Abiquiu Dam for regulation of river flow for flood and sediment control and water storage for beneficial uses of water.

Even in the highly improbable event that Abiquiu Reservoir is filled to spillway crest at elevation 6350 only the last four miles, about 13%, of the wild and scenic river that would be designated by Section 1 of S.850 would be affected.

Mr. Chairman, the opportunity to present this statement is warmly appreciated.

Phillip Wallin's Statement at Abiquiu Reservoir

Review Survey Public Meeting

April 12, 1987

I would like to acknowledge the good work of Fritz Blake who's been the Project Director on this thing but that might be the kiss of death, Fritz, but I wanted to acknowledge the very conscientious work that Fritz has put into this study. He has been in touch with us a lot. We appreciate it. I guess, the overwhelming question in my mind is whether there is end to this study. It keeps coming at us in installments. Study was done in 1981, 200,000 acre-feet of storage was authorized and the study was put on the shelf. Then it was brought out from the shelf again. Another study was done. There weren't any paying customers, so now the conclusion is, at this time, very important three words, no more storage is recommended, but then those of us who enjoy and use the river and who are concerned about Abiquiu Dam are left to wonder when will the next time come? As soon as someone is willing to pay the price for storage does that mean the study will be recommences. So the thing is kind of a perennial beast. It keeps rising, and one wonders whether there is any end to this study or whether it is a permanent state of affairs that as soon as there is any interest anywhere in the Rio Grande Basin that is willing to pay $20 an acre-foot for water regardless of what people feel in Rio Arriba or regardless of the recreation or environmental or paleontological values of areas along the Rio Chama, it is going to happen. I guess the basic feeling I have, and that is why the coalition of groups and landowners known as the Rio Chama Preservation Trust has begun an initiative to put a lid on the dam, and basically, put an end to the study through designation of the Rio Chama down

to the existing level of usage at Abiquiu Dam as a Wild and Scenic River, protected for the existing uses. I don't see any other way to settle the question, end the controversy and get on with life as it is. We've got a good reservoir, got a good river, got a lot of people still nervous about the safety issue which hasn't really been addressed. But it seems like it would be nice to put a lid on it, dispose of the issue by designating that river Wild and Scenic and get on with things. Now we have been accused of trying to lock up the dam by designating Rio Chama Wild and Scenic River down to the existing flood control pool, and that [redacted] indeed, is to lock up the dam with the understanding that Congress has the key to that lock. And that if these interest groups, water bureaucracies of a three-state area, do eventually come up with a proposal to expand the reservoir, that proposal would have to be approved by the National Parks subcommittees of Congress, as well as the Water Resources Subcommittees which traditionally have been pretty agreeable, Corps of Engineers and Bureau of Reclamation. So that's our goal, is to get a protective designation for the Rio Chama down to the existing reservoir so that if that is to be changed in the future, it would need to run the gauntlet of the Environmental Committee as well as the Water Storage Committee in Congress.

RIO CHAMA PRESERVATION TRUST

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August 20, 1987

Hon. Jeff Bingaman
Vice-Chair
Subcommittee on Public lands, National Parks
and Forests
Committee on Energy and Natural Resources
502 SHOB
Washington, D.C. 20510

Dear Senator Bingaman:

I have received a copy of an August 12 letter from State Engineer Reynolds to Senator Domenici, responding to a request for further comment on S.850. (A copy of Mr. Reynolds' letter is attached.) In light of the concern expressed by Senator Domenici over "Wild and Scenic River" designation of the lower portion of the Rio Chama, I wish to comment on the statement by the State Engineer.

With his accustomed eloquence, the State Engineer has made the best of a very weak case for future storage at Abiquiu Reservoir. His statement in this letter might fairly be summarized as follows: (1) The only candidate for storage is suplus San Juan-Chama water, for the purposes of leasing (possibly), recreation, and preventing escape of that water to the Lower Colorado Basin states. (2) The obstacle of cost for additional storage might be overcome by allocating a portion of that cost to recreation benefits. (3) Surplus San Juan-Chama water cannot practicably be utilized by Albuquerque for aquifer recharge. (4) Wild and Scenic designation for the last few miles of the Chama would be irrevocable and therefore unwise.

Let us assume, purely for the sake of argument, that everything the State Engineer says is correct. He has still made no case whatsoever that more storage at Abiquiu could enhance Albuquerque's (or anyone else's) long-term water supply. He urges more storage merely as a temporary measure to store unneeded water. As he says in his letter, "the need for conservation storage capacity in Abiquiu Reservoir will decline with time as the water requirements of those contracting for that water grow and the water is applied to the uses for which it was contracted."

P.O. Box 2383 • Santa Fe, New Mexico 87504 • (505) 988-5922

Quite frankly, if the only imaginable use for more storage at Abiquiu would be to provide a bigger recreational pool for a period of forty years, in order to deny water to the Lower Basin states, I fail to understand the concerns of the water agencies. When Albuquerque needs San Juan-Chama water, the water will be there. That was the whole purpose of the San Juan-Chama Project: to provide for future municipal water needs. The purpose was not to create an immense (and temporary) flatwater recreation pool.

The State Engineer emphasizes the importance of preventing San Juan-Chama water from flowing to the Lower Basin states. He omits to mention Article III(e) of the Colorado River Compact (to which New Mexico is a party), to wit:

> "(e) The States of the Upper Division shall not withhold water, and the States of the Lower Division shall not require the delivery of water, which can not reasonably be applied to domestic and agricultural uses."

To store water at Abiquiu because it is <u>not</u> needed for domestic or agricultural uses, for the purpose of withholding it from the Lower Basin states, is a blatant violation of the Colorado River Compact, which would surely provoke a lawsuit by the States of Arizona and California. Denying water to the Lower Basin appears to be the paramount interest of the State Engineer in this situation. He will do so, however, at the cost of defending yet another interstate lawsuit.

The State Engineer has taken the novel tack of justifying increased storage at Abiquiu as a recreational benefit. This is irrelevant, of course, to the real question before us: whether Abiquiu storage is needed for future municipal water supply. Let me respond, however, by noting that there is already a fine recreation pool at Abiquiu, and it is not clear what marginal benefit there would be from increasing that pool (at the expense of the whitewater resource). Ample flatwater recreation is already provided in north-central New Mexico by Cochiti, Abiquiu, El Vado, Heron, Eagle Nest and Navajo Reservoirs. Surely the State Engineer will not argue that it is vital to New Mexico's future to expand the Abiquiu pool for the benefit of motorboats, particularly since he says the Abiquiu pool will decline over time.

The issue of cost for Abiquiu storage, which is raised by the State Engineer, is a red herring. The problem is not that storage is expensive, but that it serves no beneficial use that will justify <u>any</u> expenditure by Albuquerque or others. Suppose the sunk cost of Abiquiu Dam were completely disregarded, and only direct costs of $8.50 per acre foot per year were charged

(for 467,000 acre feet of storage). The Albuquerque City Council would be no more inclined to waste $35.6 million for "bargain" storage than to waste $85.8 million for "full cost" storage for water that will simply evaporate over a forty-year period.

The State Engineer goes to great lengths, in his letter, to persuade us that aquifer recharge is not a feasible use for Albuquerque's San Juan-Chama water. Rather than refute his arguments here, we volunteer to bring forward a plan which is feasible. Clearly we cannot rely on the water agencies to exercise creativity in this area.

We must stress, however, that this argument over aquifer recharge only goes to the question: what should Albuquerque do with its temporary surplus of San Juan-Chama water? Even if we all agreed with the State Engineer that aquifer recharge is impossible, this would not help justify storage of surplus San Juan-Chama water at Abiquiu Dam. Storing a surplus of water at Abiquiu so that it can evaporate over a forty-year period can simply not be justified economically. If the water can be used for aquifer recharge, so much the better. If it cannot, then Albuquerque can forego delivery of San Juan-Chama water until it can beneficially use it. The long-term supply of water from the San Juan-Chama Project will still be secure, guaranteed by interstate compact, federal statute, and contract with the United States, regardless of how Albuquerque decides to handle its temporary surplus. (Attached is a memo we prepared for the City of Albuquerque to document this point.)

The reason we emphasized aquifer recharge in our testimony before the Subcommittee is this: the aquifer is Albuquerque's true long-term source of water supply. It is a reservoir which dwarfs Abiquiu. It ensures the physical availability of the water supply to which Albuquerque is legally entitled. We think it behooves Albuquerque to adopt a policy of enhancing recharge of the aquifer, to protect its long-term water supply. The City Council adopted such a policy, in R-183 (attached). We deplore the negativity which the State Engineer has shown in this regard, simply marshalling all the arguments he can imagine against the concept of aquifer recharge.

After all this sound and fury over storage needs at Abiquiu, the bottom line is: nothing. The State Engineer can project no demand for storage that would serve any future municipal or agricultural beneficial use. He can only propose that Abiquiu be used as a forty-year evaporation pond for surplus San Juan-Chama water, until even that use disappears and the reservoir is drawn down.

If this is the best the water agencies can propose, we suggest that the Subcommittee proceed with mark-up and enactment of S.850.

Respectfully,

Phillip Wallin
Vice President

PW:KLD
Enclosures

cc: Sen. Pete Domenici

"ALBUQUERQUE'S WATER SUPPLY PROBABLY BEST IN SOUTHWEST"
by S.E. Reynolds
(Albuquerque Tribune, Sept. 11, 1980)

The city of Albuquerque is probably better situated with respect to water supply than any large city in the Southwest. A recent professional paper of the U.S. Geological Survey estimates that the volume of recoverable fresh groundwater in storage in the Albuquerque subregion of the Rio Grande Basin is 2.3 billion acre-feet.

This amount of water would be sufficient for the needs of the entire state for about 575 years at the current rate of withdrawal. In the vicinity of Albuquerque the aquifer has a saturated thickness of about 9,000 feet and readily yields 2,000 to 3,000 gallons per minute to wells.

The well-known intimate relationship between the aquifers of the Rio Grande depression and the surface flow of the Rio Grande is at the same time a blessing and a constraint.

This relationship tends to stabilize the aquifer water level and pumping lift, but makes it necessary to control groundwater appropriations strictly to protect rights to the diversion and use of the fully appropriated surface flow of the Rio Grande.

The relationship between the surface water and groundwater of the Rio Grande Basin and the threat to owners of surface water rights posed by rapidly increasing groundwater uses caused the state engineer to declare the Rio Grande Underground Water Basin, extending from the Colorado state line to Elephant Butte Reservoir, and thus assert his jurisdiction over new groundwater appropriations within that basin in November of 1956. At that time the state engineer undertook to impose a conjunctive management of the surface water and groundwater of the Rio Grande system.

Under the administrative procedures designed by the state engineer to provide for fullest possible use of the abundant groundwater resources without impairment of existing surface water rights, new appropriations of groundwater would be permitted only on the condition that the exercise of rights to use of the surface water is reduced at such times and in such amounts as will offset the effects of pumping on the flow of the river.

This move was challenged by the city of Albuquerque but upheld by the new Mexico Supreme Court in 1962, when the court found that the state engineer has not only the authority but the responsibility to thus adminster the state's water resources.

The effect on the river of withdrawals from a well located five miles from the river, as many of Albuquerque's are, amounts to 50 percent of the annual rate of pumping after 24 years. With respect to the city's wells, the measurable return flow to the river as sewage effluent is about 50 percent of the amount of water pumped.

Thus, the pumping from a well five miles from the river does not begin to reduce river flows and there is no need to reduce surface water usage until 24 years after the new appropriation is initiated.

If the annual withdrawal is 1,000 acre-feet, the city would have taken 24,000 acre-feet of the unappropriated waters of the Rio Grande Underground Water Basin before it is required to begin to offset the effects on the river by the retirement of surface water irrigation rights; because of the sewage effluent return, the flow of the river would be increased during the first 24 years of groundwater pumpage.

The pumpage would not be fully reflected in the river for about 100 years, and the city would be able to use many more thousands of acre-feet of the unappropriated groundwaters before the full effects of the pumping must be offset.

Under vested rights established by the city before the declaration of the Rio Grande Underground Water Basin in 1956, the city may deplete the flow of the river by 18,672 acre-feet. In 1979, Albuquerque pumped 86,600 acre-feet for a population of 320,000 and the net effect of these withdrawals, taking into account the return flow of sewage effluent, was to deplete the flow of the river by about 2,900 acre-feet.

Recent projections indicate that the effects of the city's pumping on the flow of the river will not reach their vested right of 18,672 acre-feet unti 1987.

The city has contracted with the secretary of the interior for 48,200 acre-feet of water from the San Juan-Chama Project. The city plans to use this water to offset the effects of its pumping beyond its vested right to affect the river flow.

The city's recent projections of usage indicate that the full amount of water it has contracted for will not be needed to offset those effects until 2025, when the city's population is projected to be 780,000.

After the city's San Juan-Chama Project allocation has been fully used, it will be necessary for it to acquire and retire irrigation water rights to offset subsequent additional effects on the river.

Non-Indian irrigators in the reach of the river from Cochiti

Dam to Elephant Butte Reservoir have rights to deplete the flow of the river by 128,000 acre-feet.

At the current per capita rate of consumption, Albuquerque's vested right to affect the flow of the river equals the ultimate effect of supplying water for 138,000 people; the city's San Juan-Chama Project allocation will offset the effects of 357,000 people; and acquisition and transfer of the non-Indian irrigation rights in the reach from Cochiti Reservoir to Elephant Butte Reservoir could offset the effects of an additional 950,000 people.

An Albuquerque population of 1.5 million people would surely pose some difficult problems, but the water supply problem should be manageable.

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT CORPS OF ENGINEERS
P O BOX 1580
ALBUQUERQUE, NEW MEXICO 87103-1580

REPLY TO
ATTENTION OF

September 1, 1987

Honorable Pete V. Domenici
United States Senator
Washington, D.C. 20510

Dear Senator Domenici:

I received the letter you wrote with Senator Bingaman, dated August 10, 1987 regarding the proposed Wild and Scenic River designation for the Rio Chama. I agree that the water supply and storage questions are important issues about which the Energy and Natural Resources Committee should have all available information. Unfortunately my office is not well prepared to answer most of your questions.

The last water supply study conducted by the Albuquerque District was completed in 1979. Although much of the data is outdated, I have included a copy for your information. Our current studies on raising the level of Abiquiu Reservoir were primarily economic in nature. Storage requests were obtained from those wishing to store the water. No justification of the amounts was required. We were primarily looking at how much it would cost to store the water at Abiquiu. A very cursory analysis of alternatives was conducted, including underground storage and the construction of reservoirs at alternate sites on the Rio Chama and the Rio Grande Rivers. However, since these alternatives appeared to be more costly than storage in Abiquiu, they were not investigated in detail.

Our preliminary analysis indicated that under current law, the cost of storing increased water was very high. We did not pursue a detailed analysis of who would need the water and when, since no one was willing to accept the cost of storing the water.

Our studies were based on information provided by those organizations who expressed an interest in storing water at Abiquiu. I have enclosed a list of those potential users. I recommend that they be contacted as to what their water needs are. The New Mexico State Engineer's Office and the city of Albuquerque are probably the best sources of information on the questions you asked.

I regret that I cannot supply better answers to your questions, but the Corps of Engineers generally does not get deeply involved in water supply studies unless they are part of a flood control study or if requested to do so under our Planning Assistance to States program.

Sincerely,

Kent R. Gonser

Kent R. Gonser
Lieutenant Colonel, CE
District Engineer

Enclosure
List

Copies Furnished:

Honorable Pete V. Domenici
United States Senator
500 Gold Southwest
Albuquerque, New Mexico 87102-3152

United States Senate Committee
on Energy and Natural Resources
Washington, D.C. 20510-6150

IN REPLY REFER TO:

United States Department of the Interior

9172 (912)

BUREAU OF LAND MANAGEMENT
NEW MEXICO STATE OFFICE
Post Office and Federal Building
P.O. Box 1449
Santa Fe, New Mexico 87504-1449

1987 SEP -8 PM 12:04

SEP 2 1987

Honorable Pete V. Domenici
United States Senate
SD-434 Dirksen Senate Office Bldg.
Washington, DC 20510-3101

Dear Senator Domenici:

This is in response to your letter of August 10, 1987, regarding the Rio Chama. We see two water related issues on the Rio Chama: (1) stream flow levels between El Vado and Abiquiu reservoirs, and (2) increasing water stored at Abiquiu.

Regarding stream flow levels, we are working with the U.S. Fish and Wildlife Service to identify the minimum flow levels to maintain wildlife, fishery and recreation resource values. Once identified, we will negotiate with all interested parties in an attempt to maintain these levels.

The Bureau of Land Management (BLM) has not collected information concerning the current or future water needs of the city of Albuquerque or the State of New Mexico. We do not expect the issue of additional water storage in the Abiquiu Reservoir, on the Rio Chama, to have an affect on the portion of river managed by the BLM. The portion of river affected is managed by the U.S. Forest Service. We suggest you contact the Santa Fe National Forest Supervisor for information about Federal management of this portion of the Rio Chama and the city of Albuquerque, New Mexico State Engineers Office, and Corps of Engineers for information about water needs and storage related to Abiquiu and El Vado reservoirs.

If you have any questions, please let us know.

Sincerely,

Larry L. Woodard

Larry L. Woodard
State Director

cc:
Senator Jeff Bingaman, WO
U.S. Senate Energy and
Natural Resources Committee, WO

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

September 14, 1987

BATAAN MEMORIAL BUILDING
STATE CAPITOL
SANTA FE, NEW MEXICO 87503

The Honorable Pete V. Domenici
United States Senator
434 Dirksen Senate Office Bldg.
Washington, D. C. 20510

The Honorable Jeff Bingaman
United States Senator
502 Hart Senate Office Bldg.
Washington, D. C. 20510

Gentlemen:

Your August 10, 1987, letter, received here on August 24, 1987, requests information that you believe may be relevant to the issues involved in the Senate Energy and Natural Resources Committee hearing on S.850 in Santa Fe on July 27, 1987. The questions posed in your letter are quoted below and followed by my response.

1. What information is available on the water needs of the City of Albuquerque and the State over the next three or four decades? How much of that need can be met through conservation initiatives? What are those initiatives and proposals?

A planning report completed by the U. S. Bureau of Reclamation and the New Mexico Interstate Stream Commission in 1976 uses alternative 2020 population projections for New Mexico ranging from 4.6 to 1.6 million. The corresponding water depletion requirements range from 4.1 to 3.6 million acre-feet annually, assuming no reduction in irrigation usage except that forced by the exhaustion of ground water being taken at a rate greater than the recharge to the source. The report estimates that for the medium population projection of 2.7 million, the depletion requirement will be 3.78 million acre-feet annually and that the amount of water available for depletion in 2020 will be only about 3.15 million acre-feet annually -- a shortage of 630,000 acre-feet. The report entitled, "New Mexico Water Resources Assessment for Planning Purposes," contains abundant information of the nature requested. A copy of the report can be made available to your staff at the offices of the Department of the Interior in Washington. The report is voluminous and only

our library copies remain available here. The attached statement presented by me on June 3, 1983, contains a rather succinct summary of the information contained in the 1976 report.

Also attached is a memorandum report prepared by my office and entitled, "City of Albuquerque 1982 Effect Study," which projects the water requirement and sources of supply for the City for the years 1980 through 2060. Attention is invited to the fact that the projection shows that the city will not exhaust the San Juan- Chama Project water supply of 48,200 acre-feet annually that it has contracted for until about 2030.

2. What is the City of Albuquerque doing, or what can we expect to be done, to undertake alternative methods of storage, such as ground water recharge? How much of the need can be met through these alternative types of storage? What are the costs and what are the benefits related to these alternatives and what are any potential problems?

The Rio Grande Compact's rigorous limitations on the operation of storage reservoirs constructed in New Mexico between Lobatos and San Marcial after 1929 make the utility and economic justification of additional conservation storage capacity for Rio Grande system water on the Rio Chama, or elsewhere above San Marcial, extremely marginal at best. For 38 of the 47 years (1940 through 1986) of Rio Grande Compact administration, New Mexico has been in the debit status that limits the operation of conservation storage reservoirs. A copy of the Rio Grande Compact is attached for your convenient reference.

Under present circumstances, the entities that have entered long-term contracts with the Secretary of the Interior for San Juan-Chama Project water do not yet have need for the full amount for which they have contracted and are paying. As a consequence, the regulatory storage of the San Juan-Chama Project (Heron Reservoir with a capacity of 400,720 acre-feet) has been nearly full for several years. It has been necessary for the Bureau of Reclamation in operating the Project to bypass divertible flow at the diversion works of th San Juan-Chama Project, allowing part of the New Mexico's Upper Colorado Basin Compact allocation of water to flow down to the Lower Basin. Enactment of Public Law 97-140, which Senator Domenici sponsored, has made it possible to keep 200,000 acre-feet of that allocation in Abiquiu Reservoir. At this time the Middle Rio Grande Conservancy District, the City of Albuquerque, the City of Santa Fe, the Department of Energy (Los Alamos), Taos, Espanola and Twining have a total of 187,100 acre-feet of water in storage in Abiquiu Reservoir. Of that amount about 170,000 acre-feet is the property of the City of Albuquerque.

Storage of San Juan-Chama Project water in Abiquiu Reservoir gives those who have contracted for that water the advantage of a supply that they can sell under short-term contract to defray a part of the cost incurred under their contracts with the Secretary of the Interior. That storage also provides excellent flat-water recreation on Abiquiu Lake. Col. Gonser, District Engineer for the Albuquerque District of the Corps of Engineers, has advised that Abiquiu Reservoir attracted 733,000 visitor days in 1986. That visitation may be compared to the 3,000 visitor days reported for the river reach above Abiquiu Reservoir by the Bureau of Land Management.

There is current need for additional conservation storage capacity for San Juan Chama Project water in Abiquiu Reservoir. But the estimated cost of $22 per acre-foot per year for that capacity cannot be economically justified because of the limited and uncertain demand for water under short-term contract. In this connection, it is critically important to note that the need for conservation storage capacity in Abiquiu Reservoir for San Juan-Chama Project water will decline with time as the water requirements of those contracting for that water grow and the water is applied to the uses for which it was contracted.

The important public benefits demonstrated by the visitation at Abiquiu Reservoir indicate economic justification for payment for those benefits by some entity or entities other than those contracting for San Juan-Chama Project water. Please note that as the need for storing imported water in Abiquiu Reservoir declines recreation benefits will also decline.

There was testimony at the hearing that the storage of San Juan-Chama Project water long before the time it is needed for the uses for which it was contracted allows wasteful evaporation. Under both state and federal law, this is, of course, quite incorrect. Recreation is a recognized beneficial use, not waste; and it seems clear that the imported water presently stored in Abiquiu Reservoir provides very substantial public recreation benefits. From New Mexico's perspective, allowing the water to go to the Lower Colorado River Basin could more appropriately be termed "wasteful", particularly when we are delivering more water to Mexico than the Treaty requires, and more than Mexico can use.

There was also extensive testimony critical of the management of San Juan-Chama Project water. As I recall, the testimony was that evaporation could be avoided by simply taking the imported water from the river and injecting into the aquifer from which the City of Albuquerque draws its supply. My office has made no economic analysis of that measure, but its merit is highly questionable. It would be necessary to thoroughly desilt the water to avoid plugging the injection wells, to construct

extensive works and expend costly electric energy to convey the water to the injection wells. The benefits of the injection would be so long delayed that the present worth of the benefits of the investment would be quite small.

Perhaps as critical is the fact that the water recharged by injection could not be retained in the aquifer. The increased hydrostatic head would increase the discharge from the aquifer to the river. Geohydrologists of the State Engineer Office calculate that if San Juan-Chama Project waters were injected into the aquifer at 7.5 miles from the Rio Grande near Albuquerque, the river flow would be increased by about 10% of the rate of injection at the end of 10 years. That percentage would steadily increase with time.

If water injections were undertaken too soon or too close to the river the resulting increase in river flow could exceed the amount by which Albuquerque is required to increase the flow to offset the effects of its groundwater pumping on river flow. That excess could logically be accounted as San Juan-Chama Project water by the Colorado River Basin states or as Rio Grande system water by the Rio Grande Basin states. Under the latter accounting, 43% of the excess that reached Elephant Butte Reservoir would be used on the Rio Grande Project in Texas. Under the former accounting, New Mexico would be in violation of the Colorado River Compact and the Upper Colorado River Basin Compact if any of the excess flow was used in Texas. Under either accounting, there would be no benefit to the City of Albuquerque to justify the cost of recharging the aquifer; and costly litigation before the U. S. Supreme Court could ensue.

I am advised that the City of Albuquerque intends to undertake a study of the feasibility of injecting its San Juan-Chama Project water into the aquifer. That study should provide more definitive information than is given here.

3. What comprehensive planning has the City or State conducted relative to future water needs? What is or should be done to examine alternative sites to surface storage? Do reservoirs and aquifers provide the potential for water storage? What alternative sites have been identified?

Hopefully the information sought by these questions is given by the response to the other questions quoted above.

I note that your letter lists "increasing dam safety" as one of the numerous issues addressed at the July 27 hearing. I am constrained to address my recollection that Colonel Gonser testified at the hearing that the Corps of Engineers has recently

caused a review of the structural integrity of Abiquiu Dam to be made, and that that review revealed no cause for concern about the safety of the structure, which is capable of storing 1,201,500 acre-feet of water when filled to the spillway crest at elevation 6350. I am sure that Colonel Gonser could provide more detailed information, if it is your view that dam safety is somehow a relevant issue in the consideration of S.850.

I am in full accord with Senator Domenici's statement in the Congressional Record of March 26, 1987, "... that attempting to undo a wild and scenic designation will prove an impossible task." The attached draft transcript of the statement presented by Mr.. Wallin, an officer of the Rio Chama Preservation Trust, in Espanola on April 13, 1987, makes clear that he shares that view and that making the task difficult, if not impossible, "... is exactly our intention."

I am aware of no opposition to making most of the segment of Rio Chama between El Vado Dam and Abiquiu Dam a part of the National Wild and Scenic River System for the benefit of rafting enthusiasts, even though that would preclude taking advantage of the potential for hydroelectric generation in that reach. The real issue seems to be whether the downstream four miles of the 31 mile segment proposed to be designated by S.850 is, in fact, "the heart and soul of this bill." I respectfully suggest that that issue could be fairly and wisely compromised by giving deference to state law by adopting the amendment proposed at page 5 of the statement I filed at the hearing on July 27. A copy of that statement is attached for your convenient reference.

Sincerely,

S. E. Reynolds
State Engineer

SER:pt
Attachments

cc: Senator J. Bennett Johnston

STATEMENT
before
The Water Usage and Water Resources Committee
of
The New Mexico Legislature
by
S. E. Reynolds
June 3, 1983

The use of water in New Mexico is extensively and intricately governed by law. The water law of the New Mexico Territory was initiated by Stephen Watts Kearny in 1846. The Kearny Code provided that the laws theretofore enforced concerning water courses would continue in force except that such regulation as was required was transferred from the officials of the villages to those of the counties.

In 1851 the first Territorial Legislature enacted laws providing that all of the inhabitants had the right to construct either private or community acequias to take water from whatever source they could with the understanding that they should pay the owner through whose lands the acequias ran a just compensation for the land used.

In 1891 the Legislature required the filing of a notice of the construction of water control works within ninety days of the initiation of such construction and provided that no priority could attach to water rights for such works until the notice had been filed.

In 1898, our Territorial Supreme Court said the doctrine of prior appropriation is and always has been the settled law of this territory by legislation, custom and judicial decision. It said further, in effect, that the public interest required that that be the settled law of the territory.

Under the appropriation doctrine, no one has the right to use the public water simply because it flows by, or through or under his land. In times of shortage, the right first initiated must be first served.

Most modern students agree that the doctrine of prior appropriation is a practical system for the management of water in an arid land. Development of any kind would be discouraged if the latecomer, solely by virtue of his ownership of land, could take the water supply upon which earlier investments are based; economic enterprise other than grazing in an arid state such as New Mexico would have been virtually prohibited.

The appropriation doctrine is clearly enunciated in Article XVI of the New Mexico Constitution: The unappropriated water of every natural stream, perennial or torrential, belongs to the public and is subject to appropriation in accordance with the laws of the State. Beneficial use shall be the basis, the measure and the limit of the right to the use of water. And priority in time of appropriation shall give the better right.

The appropriation doctrine is the antithesis of the "riparian doctrine," sometimes referred to as the "common law," under which the owner of the stream bank is entitled to the continued flow of the stream as against the persons upstream who might undertake to divert the flow of the stream for some purpose. Our Supreme Court has found that three elements, effected in accordance with law, are essential to a water right in New Mexico: a man-made diversion, the intent to apply the water to a beneficial use and diligence in carrying out that intention. Simply stated, our Constitution has been interpreted to mean that all of the waters of our streams and underground sources are subject to appropriation, and there can be no appropriation for a beneficial use without a man-made diversion. There can be no "instream right" under our state law. (Harkey v. Smith, 31 N.M. 521 (1926) and State ex rel Reynolds v. Miranda, 83 N.M. 443 (1972)).

The Legislature has found that the application of water to beneficial use is essential to the economic development and the welfare of the people of the state and, therefore, is a "public purpose." For this reason, the Legislature has granted to any person seeking to make beneficial use of water the power to condemn the rights-of-way and easements necessary to divert the water and convey it to the place of use (Sec. 72-1-5 NMSA 1978). That power is an essential element of the appropriation doctrine; were it not granted, the owners of the stream banks, the riparians, could frustrate the application of the public water to beneficial use by preventing access to it.

The Office of the Territorial Engineer was created in 1905 and our surface water code was amended and reenacted in substantially its present form in 1907.

The amended surface water code recognized all rights initiated prior to March 19, 1907, the effective date of the Act (72-1-2 NMSA 1978). Under that code no person may initiate the construction of works for the diversion or storage of water or change his point of diversion, or place or purpose of use without a permit from the State Engineer (Sec. 72-5-1 NMSA 1978). When a permit is applied for, the State Engineer must require a notice of the application to be published in a newspaper of general circulation in the stream system once a week for three consecutive weeks (Sec. 75-5-4 NMSA 1978). Any person whose water right might be affected may protest the granting of the permit within ten days after the last publication of the notice. If a protest is filed, there must be a hearing before the State Engineer before the application is acted upon. The hearing is quasi-judicial in nature. Evidence and legal arguments are submitted by the applicant, the protestant and, in some cases, the staff of the office of the State Engineer.

Whether or not the application is protested and a hearing is held, the State Engineer may grant a permit for a new appropriation only upon a finding that there is unappropriated water available for the benefit of the applicant. The State Engineer may approve an application to change the point of diversion or the place or purpose of use of a surface water right only if the exercise of the permit would not be to the detriment of the rights of others having valid and existing rights to the use of the water of the stream system (Sec. 72-5-23 NMSA 1978).

The Engineer's decision is subject to appeal to the district court.

Our groundwater code was enacted in substantially its present form in 1931. (Sec. 72-12-1, et seq NMSA 1978). The provisions of that code closely parallel the surface water code. Perhaps the most important difference is that the State Engineer has no jurisdiction, except to prevent waste, outside what are called declared underground water basins.

Our State Supreme Court held in a 1950 opinion (State ex rel Bliss v. Dority, 55 NM 12) that the provisions of Article XVI of our Constitution are applicable to the ground waters as well as to the surface waters of the State.

When the State Engineer finds that the waters of an underground source have reasonably ascertainable boundaries, and he so proclaims, or "declares," by describing the administrative boundaries of the basin, he asserts jurisdiction over appropriations from the source for beneficial use (Sec. 72-12-12 NMSA 1978). The State Engineer may declare an underground water basin without prior notice and hearing by filing an order with the State Records Center. The order is effective upon filing, but a public hearing on the order must be held within 30 days of the publication of a notice of the order.

Within a declared underground water basin no well may be drilled

without a permit and drilling may be done only by a well driller licensed by the State Engineer. Outside the boundaries of the declared basins the groundwater belongs to the public and is subject to the doctrine of prior appropriation, but no permit is required to drill a well and appropriate ground water for beneficial use. About 69% of the state's area -- 84,000 square miles -- is now within the boundaries of 31 declared underground water basins.

To give some historical perspective I would point out that in 1955 only about 8%, or 10,000 square miles of the State's area was within declared groundwater basins.

The essential effect of the declaration of an underground water basin is to shift the burden of proof. Within declared basins, the person seeking to make a new appropriation or to change the location of his well or the place or purpose of use of his water right has the burden of showing that the new appropriation or the change will not impair any existing water rights. With respect to groundwater appropriations outside the boundaries of declared basins, the owners of water rights have recourse to the court if they believe that their water right would be impaired, but they have no recourse before the Engineer. In seeking an injunction or damages, the owner of a prior water right would have the burden of proof.

This effect is very simply stated, but it can be crucial. Geohydrology is often complex, and sometimes nearly inscrutable, so that the burden of proof can be heavy.

A very important, but often overlooked, feature of New Mexico's water policy as set by Constitution and statutes is that all beneficial uses are on equal footing; the priority, not the nature of the beneficial use, controls. Our statutes provide certain exemptions from administrative procedures for stock and individual domestic use,

presumably because the amounts involved are small and administrative convenience can be provided without substantial risk to water right owners who remain protected against abuse or miscarriage of the administrative exceptions by the Constitutional doctrine of prior appropriation. The only other use preference given by our water policy is the power to condemn water rights for public purposes that is granted to municipalities, counties, the State, and, I presume, the federal government.

The 1907 statute (Sec. 72-4-13) directed the State Engineer to make hydrographic surveys and investigations of each source of water supply in the State beginning with those most used for irrigation and obtaining and recording all available data for the adjudication of rights to the water supply of the State. Our estimates indicate that the total irrigation water right acreage within the State is about 1,436,000 acres, including all irrigated pasture and cropland, and fallow and idle acreage. Prior to 1955, about 169,000 acres of that total had been surveyed and adjudicated. Since that time, an additional 21,000 acres have been adjudicated, and an additional 375,000 acres are currently involved in ongoing adjudication suits, including about 99,000 acres in the San Juan and Pecos River Basins that are being readjudicated. When the ongoing adjudication suits have been completed, a total of about 466,000 acres, or about 32% of the total of irrigation water rights will have been adjudicated.

One might conclude that progress on the adjudication of water rights pursuant to the 1907 directive of the Legislature has been slow. The tendency has been to devote available resources to adjudications only as circumstances made necessary. Those circumstances have been such that more than twice as much acreage has been brought to adjudication since 1955 as in the period from 1907 to 1955. Circumstances that make adjudications

necessary are court orders directing the Engineer to make hydrographic surveys for the adjudication of a stream system, projects such as the San Juan-Chama Diversion Project which blends imported water with the native waters which have already been fully appropriated, and demands for basin-wide enforcement of priorities as made by the Carlsbad Irrigation District in 1976.

Ten water rights adjudication suits involving 375,000 irrigated acres and about 20,000 defendants are pending. Six of these involve Indian water rights. Four of the pending suits are among those cases for which the 1983 Session of the Legislature made a special appropriation of $1,533,000; we have estimated that over $1 million of that appropriation will be needed for those adjudication suits.

The water law of most western states is based, at least in part, on the appropriation doctrine. It is generally recognized that New Mexico's water code is among the best in the west. For this, all three branches of State Government, the legislative, the judicial and the executive deserve much credit.

Most of the people of New Mexico probably don't fully appreciate the importance of the role that our courts have played in establishing and preserving New Mexico's water management institutions.

This is not to say, of course, that the public doesn't understand pretty well the controlling role that the legal profession plays in government.

The lawyers in the Legislative Council Service draft the bills. The lawyer legislators and the lawyer lobbyists are often the controlling factor in the enactment of legislation. The executive department officer delegated the responsibility of administering the act has a lawyer who tells him what the law requires him to do. And then the lawyers in black robes tell

the administrator what he did wrong.

I am sure you will recognize that these remarks are tongue-in-check -- an engineer baiting the lawyers as tradition requires. I must admit that to the extent I am sanguine about our water laws -- and I am -- much credit to the legal profession is implied.

Realizing the importance of water to the economy of the State and the welfare of its citizens, many logically conclude that the office of the State Engineer is vested with great power. As are many logical conclusions, that one is not well founded. The Legislature sets the policy for water management. The State Engineer can only implement that policy as it is construed by the courts. Our statutes on water fill a volume about two inches thick and the case law -- our Supreme Court opinions in water cases -- stack up another 3.5 inches on 8.5 x 14 sheets. The statutory and case law rather effectively constrain the discretion of the State Engineer. Furthermore, the State Engineer's every "decision, act, or refusal to act" is subject to appeal to the district court (Sec. 72-2-16 NMSA 1978); and this recourse is not infrequently sought.

In our system of government, judicial legislation is frowned on. But, an essential function of our courts is to ensure that the statutes are enacted and administered in accordance with the principles enunciated in our Constitution. This function is particularly difficult and essential in the interpretation of laws dealing with technical subjects such as water. The record shows that our Supreme Court has been studiously careful and has exhibited great wisdom in its opinions in water cases. With your indulgence I will cite just a few examples from the Surpreme Court opinions of the last 28 years.

In considering the Court's opinions it is important to have in

mind that our Constitution provides that the unappropriated waters of the natural streams of the State, perennial or torrential, belong to the public; that these waters are subject to appropriation in accordance with law; that beneficial use is the basis, the measure and the limit of a right to use of the public waters; and that priority of appropriation gives the better right.

In Templeton v. the Pecos Valley Artesian Conservancy District and the State Engineer (65 N.M. 59), a 1958 Supreme Court decision, the issue was whether a person having a right to divert the surface waters could drill a well to supplement his supply which had been diminished by junior appropriators drilling and operating wells which intercepted the natural discharge of an aquifer to the stream upon which the surface water user depended.

Considerations of equity might seem to make the answer clear, but our statutes and rules and regulations gave ample ground for plausible, technical argument. The effect of the Court's opinion was that the prior appropriator of stream water has the right to follow the stream water to its underground source and the right to drill wells and take the underground water necessary to fill his prior stream right, regardless of detriment to other underground water appropriators whose rights were subsequent in time to the stream rights.

In City of Albuquerque v. the State Engineer (71 N.M. 428), a 1962 decision, the question was whether the State Engineer could impose, as a condition on a permit to appropriate underground waters, a requirement that surface water usage under valid water rights be reduced by an amount sufficient to offset the effects of the groundwater appropriation on the fully appropriated stream flows.

The Court held that the Engineer had not only the power but the

duty to impose such conditions on new groundwater appropriations as are necessary to protect surface water rights in a situation where there is a significant hydrologic relationship between the groundwater source and the stream. It is interesting that in this decision the Court relied on and made clear its decision in the Templeton case.

In Templeton and Albuquerque the Court made it perfectly clear that the coordinated management of surface and groundwater is not only possible but is essential under New Mexico's Constitution. These decisions put New Mexico a quantum jump ahead of the other states in the management of groundwater appropriations. That the coordinated management of surface and groundwater is essential is now generally conceded and several states have emulated our law in this respect.

In Mathers v. Texaco and the State Engineer (77 N.M. 239), a 1966 decision, the issue was groundwater mining in the Lea County Underground Water Basin. The term "mining" denotes withdrawals in excess of recharge. In that basin the amount of water in storage in the aquifer is very large compared to the annual recharge; and any practical pattern of withdrawals can have little effect on the discharge from the aquifer in New Mexico across the Texas state line. In discussing the facts the Court termed the aquifer "non-rechargeable."

The Court held that in a geohydrologic situation such as that obtaining in Lea County, mining of the groundwater is acceptable under the doctrine of prior appropriation. The Court concluded:

> The administration of a "non-rechargeable basin", if the waters therein are to be applied to beneficial use, requires giving to the stock or supply of water a time dimension, or, to state it otherwise, requires the fixing of a rate of withdrawal which will result in a determi-

> nation of the economic life of the basin at a selected time.

In effect, the Court held that it was reasonable for the State Engineer to establish an "economic life" for the basin and to distribute the allowed withdrawals over the area of the basin to achieve an areally uniform time of depletion of the water supply and thus establish a time of use for the rights granted at something less than perpetuity.

Had the Court gone the other way the first appropriation in a non-rechargeable basin might be the last and much of our fresh underground water would have been locked in place.

State ex rel State Engineer v. Miranda (83 N.M. 443), a 1972 opinion of our Supreme Court, treated the question whether a water right had been created by the grazing and cutting of grasses on land that had been irrigated by the natural spreading of water in Abo Wash. While the court had not before addressed this specific question, it had in Harkey v. Smith (31 N.M. 521), a 1926 decision, enunciated the principles involved. In that case, the court held:

> It may be stated generally that, under the arid region doctrine, uncontrolled by statute, the appropriation of water is accomplished by taking or diversion of it from a natural stream or other sources of water supply, with intent to apply it to some beneficial use or purpose, and consummated within a reasonable time by the actual application of the water to the use designed or some other useful purpose... . Under this doctrine it is quite as necessary to make use of the water as it is to divert it; in fact no appropriation can be effected without such use. The intent, diversion, and use must coincide.

In its opinion in Miranda the Supreme Court pointed out that in the trial before the district court, the court, together with counsel for both parties, had agreed that the case would turn on one legal issue, "whether physical efforts of man resulting in visible diversion of water are necessary to the establishment of water rights in the State of New Mexico"; the Supreme Court then applied the principle of Harkey v. Smith saying:

> We hold that man-made diversion, together with intent to apply water to beneficial use and actual application of the water to beneficial use, is necessary to claim water rights by appropriation in New Mexico for agricultural purposes.

The necessity of a man-made diversion to establish a water right is perhaps the principal factor distinguishing the appropriation doctrine from the riparian doctrine of water rights. Under the latter, the riparian, the owner of the banks of the stream, has a right to the continued natural flow of the stream through or along his property. The Colorado Supreme Court, in a 1965 decision, has stated the proposition this way:

> The right to the maintenance of the "flow" of a stream is a riparian right and is completely inconsistent with

the doctrine of prior appropriation.

The New Mexico Interstate Stream Commission was created by statute in 1935 (Sec. 72-14-1 NMSA 1978). The Commission consists of nine members, eight of whom are unsalaried. Each of these eight is appointed by the governor to represent a different irrigation district or section of the State. By law the State Engineer is the ninth member and the secretary of the Commission. As its secretary, the State Engineer is the executive officer of the Commission. The Interstate Stream Commission has several important functions. Among these are the negotiation and administration of interstate water compacts. In the United States, the use of interstate streams is governed by the doctrine of equitable apportionment. Indulging in a gross over-simplification, this doctrine can be said to provide that the upstream state cannot withhold all of the water of an interstate stream and the downstream state cannot require the delivery of all of the flow of the stream. The waters of interstate streams may be equitably apportioned between states by interstate agreements, or compacts consented to by the Congress, by Supreme Court decrees or by acts of Congress.

In equitable apportionment suits between states whose water laws are based on the doctrine of prior appropriation, the Supreme Court has given great weight to the priority of appropriations in the two states, but has departed from a strict application of the doctrine of prior appropriation across states lines when necessary to protect an existing economy based on the beneficial use of water. An example is

the Court's decree in Arizona v. California, et al., (1964), which apportioned to New Mexico from the Gila River system the amount of water needed for then existing rights in New Mexico, even though some of those rights were junior to downstream rights in Arizona.

It is generally agreed that interstate compacts are preferable to Supreme Court litigation in the apportionment of the use of interstate streams among states for the reason that those negotiated agreements can give greater flexibility than is usually possible in a court decree. New Mexico is party to eight interstate stream compacts. All of our major streams are subject to one or more such agreements. One of our streams, the La Plata River, is subject to four interstate compacts. These eight compacts, one Supreme Court decree and three federal district court decrees control the beneficial consumptive use that New Mexico and our neighbors are entitled to make from most of our interstate streams.

Four of our compacts were entered with the objective of maintaining the status quo on streams already fully appropriated. They are the La Plata River Compact, the Rio Grande Compact, the Pecos River Compact and the Costilla Creek Compact. New Mexico is deeply indebted to the farmers who moved early and effectively to apply the waters of these interstate streams to beneficial use.

Three of our compacts, the Colorado River Compact of 1922, the Upper Colorado River Basin Compact and the Canadian River Compact were entered with the objective of quantifying and guaranteeing in perpetuity our rights to future development; that is, to ensure that early development in neighbor states, upstream or downstream, did not, because of the applicability of the doctrine of prior appropriation, preclude our development and use of the interstate waters.

The Animas-La Plata Project Compact was entered in 1968 to ensure New Mexico users co-equal treatment in the operation of the project authorized by the Congress to be constructed in Colorado for the benefit of both states.

The Interstate Stream Commission also has responsibility for the conduct of litigation over interstate waters. The United States Supreme Court has original jurisdiction over disputes between states; that is, the trial starts in the court of last resort. New Mexico is party to four actions presently pending in the United States Supreme Court. Arizona v. California was filed in 1952. New Mexico was impleaded in this case because of her interest in the waters of the Lower Basin of the Colorado River system. In its 1964 decree, the Supreme Court, among other things, apportioned the consumptive use of the waters of the Gila River system between the states of New Mexico and Arizona.

Texas and New Mexico v. Colorado was filed in 1966 with Texas and New Mexico alleging that Colorado had failed to make delivery of water in accordance with the Rio Grande Compact. That case is still pending under a continuance stipulated in 1968 which holds prosecution of the suit in abeyance so long as Colorado each year meets her delivery obligations under the compact. Under this stipulation Colorado has reduced her accrued debit from 944,400 acre-feet at the end of 1967 to 648,600 acre-feet.

Texas v. New Mexico was filed in 1974 with Texas alleging that New Mexico has failed to make deliveries of water in accordance with the terms of the Pecos River Compact.

Colorado v. New Mexico was filed in 1978 with Colorado seeking an equitable apportionment of the waters of the Vermejo stream system. Uses from that system in New Mexico with priorities earlier than the

turn of the century suffer chronic shortages. No appropriation, other than perhaps minor ones for stock watering, have been made in Colorado. The Colorado Fuel and Iron Company proposes to take water from the system for export to the Purgatoire River system in Colorado.

The Special Master, Judge Ewing Kerr, submitted his report to the Supreme Court on December 31, 1981. The report recommended that Colorado be allowed to take the first 4,000 acre-feet from the stream system, which averages about 5,500 acre-feet per year at the state line. The Court remanded the report to the Master for the reason that it deemed his findings inadequate for the recommended decree.

The State of New Mexico has recently prevailed (July 3, 1978) in another very important United States Supreme Court decision. United States v. New Mexico arose out of a suit for the adjudication of water rights in the Mimbres River system. Thus, this suit involves the State Engineer on his motion to intervene rather than the Interstate Stream Commission. In this case, the United States claimed that withdrawal of lands from the pubic domain for the purposes of the national forests reserved for the United States rights to minimum instream flows for esthetic, recreation and fish and wildlife purposes. The Supreme Court found that the purposes of the forest are to secure favorable conditions of water flows, that is, watershed protection, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States. The Supreme Court held, therefore, that the withdrawal of lands for forest purposes did not reserve water from appropriation under state law to maintain instream flows on the forest lands. This decision has the effect of strictly limiting the purposes for which the United States has reserved waters upon the public domain and is, therefore, of great importance in water management

throughout the west.

The Interstate Stream Commission also represents New Mexico in working with federal agencies in formulating plans for federal water projects and in seeking congressional authorization and appropriations for the construction of those projects.

Much of the construction needed to control and develop New Mexico's water resources is already in place or authorized for construction, principally in the form of federal water projects. Since 1955, about $1.4 billion worth of water projects have been completed, are under construction or have been authorized for construction in New Mexico. These projects include the Bureau of Reclamation's Navajo Dam and Reservoir at a cost of $44 million; the 110,630 acre Navajo Indian Irrigation Project at a cost of about $523 million; the San Juan-Chama Project at a cost of about $95 million; the Hooker (or suitable alternative) unit of the Central Arizona Project at a cost of $180 million; the Animas-La Plata Project, a $540 million project with a cost of $80 million allocable to water users in New Mexico; Brantley Dam and Reservoir on the Pecos River above Carlsbad at a cost of about $269 million; the Corps of Engineers and Bureau of Reclamation Middle Rio Grande Project for flood and sediment control and water conservation at a cost of about $190 million; the Los Esteros Dam and Reservoir on the Pecos River at a cost of about $40 million; and projects of the Soil Conservation Service under the Small Watershed Protection and Flood Prevention Act at a cost of $58 million with $47 million of construction completed.

The fact that the stage of development of the water resources to which we are entitled is probably further advanced than in most of the other western states may be attributed to several factors. The federal

water agencies, namely the Bureau of Reclamation, the Corps of Engineers, Soil Conservation Service and the U. S. Geological Survey have worked closely with State officials and have been most sensitive to the State's objectives and goals; New Mexico has been unusually well represented in the Congress by men acutely aware of the State's water needs. And last, but perhaps not least, we don't have as much water to develop as many of the other western states, such as California, Colorado, Oregon and Washington.

While New Mexico is well along in the development and management of her water resources and it is unlikely that we will ever need to seek authorization for major new irrigation projects, we may yet need costly municipal and industrial water supply projects such as the Gallup-Navajo Project that is currently under study, with construction costs estimated at $230 million.

In the formulation of plans for federal water projects, it is occasionally necessary for the Interstate Stream Commission to undertake to resolve controversies between local interests in New Mexico. An example is the bitter controversy between interests in our San Juan and Rio Grande basins over the authorization of the San Juan-Chama Project. In one negotiation session, I asked Dave Martin, who was then Chairman of the Board of the Bloomfield Irrigation District in the San Juan Basin, whether he wouldn't rather see some of the San Juan River water diverted for use in the Rio Grande Basin than see it stay in the stream and run down for use in California and Arizona. He replied, "No, and if somebody is going to bed with my wife, I would rather it wouldn't be my brother." Such an emotional reaction to water issues, national, regional, State and local, is not unusual.

Rain and snow bring about 85 million acre feet of water per year

to the surface in New Mexico. The acre-foot is one of those non-rigorous units that engineers sometimes use to the dismay of physicists. It's impossible to balance an equation using that unit. An acre-foot is the amount of water required to cover an area of one acre one foot deep, 325,851 gallons; 85 million acre-feet would cover the entire State a little more than one foot deep.

From the 85 million acre feet we realize about 3 million acre-feet as runoff. We also get about 2 million acre-feet of runoff from Colorado, principally in the Rio Grande and San Juan River systems, but we net little from outside the State. When we have fully put to use what we are entitled to under the compacts and court decrees governing our interstate waters, the outflow from the State will very closely approximate the inflow from other states.

We are also blessed with about 20 billion acre-feet of ground water in storage below New Mexico; that's equal to all the precipitation we can expect in 240 years -- enough to cover the entire state to a depth of about 260 feet. A little less than one-fourth of the 20 billion acre-feet is fresh or slightly saline.

In 1980 we diverted about 4.4 million acre-feet of water. Of that amount about half was from underground sources and half from streams. Of the underground water taken about half was "mined", that is, taken at a rate greater than the rate of recharge. We practice such "mining" principally on the east side and in the southwest corner of the State.

A little more than half of the water diverted was consumed, or depleted, by evaporation or plant transpiration; the balance returned to the underground sources or stream systems and was available for subsequent diversion in New Mexico or downstream states. About 87% of the water diverted for beneficial use was used for the irrigation

of a little more than a million acres of land.

All but about 175,000 acre-feet of the surface waters that we are entitled to are committed to existing or planned uses. Much of that committed has not yet been put to beneficial use. We can expect substantial stimulation of our economy as the waters made available by Navajo Dam, the Navajo Indian Irrigation Project, the San Juan-Chama Project, the Animas-La Plata Project, the Hooker or Conner unit of the Central Arizona Project and the Interstate Stream Commission's Ute Dam and Reservoir Project are applied to the intended beneficial uses.

A planning report completed by the U. S. Bureau of Reclamation and the New Mexico Interstate Stream Commission in 1975 uses alternative 2020 population projections for New Mexico ranging from 4.6 million to 1.6 million. The corresponding water depletion requirements range from 4.1 million to 3.6 million acre-feet annually, assuming no reduction in irrigation usage except that forced by the exhaustion of ground water being taken at a rate greater than the recharge to the source. The report estimated that for the medium population projection of 2.7 million the depletion requirement will be 3.78 million acre-feet annually and that the amount of water available for depletion in 2020 will be only about 3.15 million acre-feet annually -- a shortage of 630,000 acre-feet.

The projected water supply might be augmented by weather modification, importation from other states, desalting of our abundant brackish and saline water resources or by conservation, that is, more careful use of what we have. There are many questions about weather modification, not the least of which is whether we have the technology in hand. The January 1981 position of the American Meteorological Society is that

weather modification is largely still in the stage of exploratory research and experimentation. The other augmentation possibilities that I mention involve very difficult political and economic problems, the latter exacerbated in recent years by the energy crisis. Prudence suggests that in current planning we should not rely heavily on such augmentation schemes.

With four original jurisdiction contests over water pending in the U. S. Supreme Court and with El Paso challenging our water laws in the federal courts in an effort to take possibly all of the water New Mexico has below Elephant Butte Reservoir, our first priority has to be to fight and scramble to keep what we have rather than trying to augment that supply by persuading other states to let us export their water.

As a bureaucrat-engineer, I have learned that for every complex problem there is a simple answer -- and it's wrong. Nonetheless, I'll risk suggesting that if the problem is to take care of a growing population with a fixed supply of water, the solution is a change in the pattern of use.

In New Mexico a water right is a property right. The property right in a water right is what the attorneys call a "usufruct," a right to use the water - the water right owner doesn't own the corpus of the water. The water still belongs to the state as trustee for its citizens. The water right owner in effect has a franchise.

In New Mexico, water rights can be bought and sold and the right to change the point of diversion and place and purpose of use is an intrinsic part of the owner's property right, if the change can

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be made without impairing or detrimentally affecting any other water right. Under this law, water rights are available in the market place and will tend to move to the uses of highest economic value. It has been aptly said that, "water will flow uphill to money." The cities, the counties and the State have the power to condemn water rights at fair market value for public purposes. Industries do not have this power and must negotiate with the owners of water rights.

An acre-foot of water depleted in an urban-industrial culture such as that existing in the Albuquerque area, will support about 70 times more people than an acre-foot of water consumed in an irrigation economy, such as will be created by the 110,630 acre Navajo Indian Irrigation Project under construction by the Bureau of Reclamation in San Juan County.

As industrial activity and our population increase, irrigation water rights can be acquired and transferred to meet the growing municipal and industrial water requirements. An acre-foot of water applied to municipal and industrial use generally creates economic values much higher than are created by the use of the same amount of water in irrigation; municipal and industrial officials should be able to be generous in their negotiations with the owners of irrigation water rights.

Grossly generalizing, it can be said that a 15% reduction in our irrigation economy would provide the water needed to nearly double the present economy based on municipal and industrial usage.

El Paso has characterized New Mexico's law as providing for an intrastate "free market" in water. I cannot doubt that the 1907 Territorial Legislature foresaw the time when the public water would be fully appropriated and the very fundamental importance of a water right owner having the right to change the point of diversion and place

and purpose of use of his water right to meet the needs of a growing population and non-agricultural industry. But the market provided for by the 1907 law is not a water market rather it is a market in franchises to serve the public welfare by making beneficial use of the public water.

It is important to understand that the State doesn't "sell" unappropriated water -- only a very modest filing fee is paid to the State. El Paso has not offered to pay anything for the unappropriated public water of New Mexico that that city proposes to take. I think they understand.

The oft-heard statement that water is a limiting factor in New Mexico's economic development is trite and true. Water is perhaps the limiting factor in that development, but we are still far from that limit.

Obviously, meeting growing municipal and industrial needs by decreasing irrigation usage implies some consequences for New Mexico's traditions and environment; hopefully, those consequences would not be unacceptable for they may be unavoidable.

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September 14, 1987

Hon. Pete V. Domenici
U.S. Senate
434 Dirksen Bldg.
Washington D.C. 20510

Dear Senator:

My apologies for the delay in responding to your August 10, 1987 letter. I enclose, herewith, my response to your letter. I also felt it necessary to respond to the letter of the State Engineer dated August 12, 1987. I have tried to check and double check the statements and computations in my response so that they are true and correct to the best of my knowledge.

Subsequent to the hearing in Santa Fe, you mentioned to me that the City of Albuquerque had new data that showed I was wrong - about something?

I have met with the City of Albuquerque and I have yet to learn what I was wrong about. Certainly, no one has ever questioned my computations in the Jicarilla v. U.S. case. When my assumptions were challenged at trial, I carried out new computations using whatever assumptions defendants wished and still came up with a minimum waste of 93% under their storage scheme and as I mentioned at the hearing, the trial court established my results as true and adjudicated fact.

If you can be more specific, I will address the matter directly.

Sincerely,

Bill Turner

William M. Turner
President

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September 14, 1987

Senator Pete V. Domenici
U.S. Senate
434 Dirksen Bldg.
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RE: SUPPLEMENTAL MATERIAL FOR S.850 HEARING RECORD

Dear Senator:

Thank you for your letter of August 10, 1987 requesting additional information on long range water planning strategies of the City of Albuquerque. Let me be quick to point out that Albuquerque is not the only city along the Rio Grande and its tributaries and that all communities must carry out long term water planning studies.

Various population projections have been made for Albuquerque and other communities. These projections change with time as a result of unforseen social and economic factors. The future water requirements of Albuquerque have also been projected and they too change with time. The point being that water planning must be concieved of as a dynamic process.

Albuquerque has finally realized that its water resources are finite. The difficulty is that, in the past at least, it's engineering staff has been conceptually geared to studies and quick fix solutions. Unfortunately, the City Planning Staff has had no involvement in water resources planning and the City engineers are engineers first and, in my view, they are not qualified to carry out long term water resources planning. Those within the City who have the most experience and insight into the water planning process have no decision making authority.

On September 11, 1987, Albuquerque received proposals from firms interested in developing and organizing all of the available water resource data and in carrying out some planning studies. The City will begin to look at alternatives for water supply, conservation and long term storage. The difficulty with the study is not that the work is not needed but that the contract is an engineering contract and the work, at least at this stage is not an engineering problem. In my view, it is a problem in Operations Research and very few engineering firms have capabilities in this area. Consequently, those firms which do have demonstrated expertise could be excluded from the contract at the very beginning.

Operations Research is a method of examining the economic result of allocating and manipulating the quantity and quality of available resources under certain rules of operation created by legal, political and economic and engineering realities. Given a sound operations model of a given water resource system and the demands to be placed upon it, sensitivity analyses are carried out to maximize the use of the resource and its economic benefit. These models allow for rapidly changing parameters and provide the factual basis for the political system to establish the necessary political and legal framework for the necessary engineering and construction projects to take place and for permissable allocation of the resource among competing uses.

In my opinion, the work which will begin shortly in Albuquerque places the horse slightly before the cart and to do so may set us off on the wrong foot such that we may not be able to get in step easily. Results of tasks in the study may be taken by engineers and cast into projects without the overview evaluation provided by operations models. The information is needed but more importantly, in my view, is the necessity for the operations models upon which the data hang. There are those who might argue that the information is needed to design the operations model and as long as those individuals are qualified planners, one might allow the argument providing they do not lose sight of the need for dynamic systems analysis and operations research planning.

The process by which the City has arrived at the present scope of work could have been more comprehensively performed. The project bid documents were developed almost if not completely internally without input from others in the City and State and in the community at large who are well versed in water resources planning. This is not intended to slight those who developed the documents. They have done an outstanding and long needed job.

With regard to water resource management and use projects, I am enclosing some recent articles from the press which point out the efforts of other communities in the United States and abroad to deal with water shortages and artificial recharge.

As a hydrologist, let me say that large dams are used for essentially three functions: 1) flood control; 2) regulation of river flow for irrigation projects and short term domestic and commercial water supply and electric power production; and 3) impoundment of surface water for short term carry-over storage for irrigation, domestic and commercial uses. Large, publicly funded, dams are never used for long term storage of water for any purpose because it leads to unconscienable waste and they are never built primarily for recreational use of the water impounded behind them. The recreational use is always a fringe benefit.

Let me say also that it is almost axiomatic that the worst place to store water in arid areas is on the surface. Where possible, water should be stored beneath the ground where it escapes evaporation. Underground storage also has a small requirement for surface rights.

With regard to the establishment of a permanent pool for storage of San Juan Chama water at Lake Abiquiu or in any other reservoir, only short term, temporary storage should be permitted and certainly other alternatives for the storage must be reviewed.

In the hearings and in subsequent discussion, neither the City, the State Engineer nor the Corps of Engineers has pointed out that water in a reservoir has priorities. With relation to Lake Abiquiu, the sediment pool has the first priority; the flood pool the second priority and the San Juan Chama domestic storage pool the third priority. It is important to understand this for if a flood on the Rio Chama inundates the reservoir, Albuquerque's water would be the first to be spilled with the flood water next. The sediment pool never spills. This past year at Elephant Butte normal runoff caused spillage. Had Albuquerque successfully stored its San Juan Chama water in Elephant Butte, it would all have been lost this year.

Underground storage of San Juan-Chama water can take place within the Santa Fe Group of sediments which fill the Rio Grande Valley south from Espanola. All streams debouching from the Sangre de Cristo, Sandia and Manzano Mountains are "line sources of recharge"; that is, water which flows in them from their mountain catchments percolates into the ground to become ground water. The runoff in the Little Tesuque River, Santa Fe River and Tijeras Creek, for example, percolates completely into the subsurface. Were San Juan-Chama water led into any of the arroyos on the west face of the mountains, it would percolate into the subsurface. Those arroyos must be set aside as open space and in fact, the recharge facilities could be coupled with large parks for the public weal.

Water conservation can liberate enormous amounts of water. For example, a city ordinance requiring the use of one-gallon flush toilets could save 25,000 gallons per year per home. Albuquerque is anticipated to grow to one million people in the not too distanct future. The addition of 100,000 homes using one-gallon flush toilets would result in a saving of 7,672 acre feet per year. This is water which is never pumped from the ground or treated at a waste water treatment plant. If electric power is $0.10 per kilowatt-hour and the average depth to ground water is 200 feet, the cost to pump this water will be $249,185 per year.

The use of water conservation showerheads which pass 1.8 gallons per minute at 60 pounds per square inch pressure is to be encouraged over normal showerheads which pass 4 to 6 gallons per minute.

There are water conservation policies the City could adopt now without any capital expenditure which will stretch the resource and reduce the municipal budget. As a developer myself, I require water conservation features on all homes constructed in our subdivision. The City of Albuquerque has no water conservation policies beyond the issuance of citations to people who waste water by letting it run into the streets. The City is likely the biggest culprit and I think you would be hard pressed to find any citations under the ordinance.

I would also like to take this opportunity to comment upon the letter written by the New Mexico State Engineer and dated August 12, 1987. His points are believable to the uninformed but are indeed specious.

The State Engineer argues that the 187,100 acre feet of water stored in Lake Abiquiu is available to meet short term contractual commitments which the signatories to the project have made. This is convenient language to circumvent the clear intent of federal statutes and case law that bars the storage of San Juan-Chama water only for recreational purposes. The point is that the water is available in any event to meet these commitments because the contracted water bypasses the storage facility in spite of Lake Abiquiu. That is, because there is not sufficient surface storage capacity in the surface reservoirs, San Juan-Chama water flows to the Lower Rio Grande Basin area anyway and the effects of diversion on the surface flow of the Rio Grande are completely offset with our without Lake Abiquiu storage.

The State Engineer states that Lake Abiquiu experienced 733,000 visitor days in 1986. That number needs some explanation because it is impressive. The Corps of Engineers has traffic counting devices at key places at Lake Abiquiu. The number of visitor days is determined by multiplying the number of cars passing a

counter and multiplying by the average number of people in a car (about 3.0 passengers per car at Lake Abiquiu) and then multiplying by the percentage of cars that are estimated to be recreational traffic which in the case of Lake Abiquiu is 60 percent. The number does not take into account two-way traffic; that is, a single recreational vehicle may travel going and coming over the traffic counter and instead of one vehicle, two are counted. Now having, determined 733,007 visitor days in 1986, the recreational use is divided into boating, fishing, hunting, picnicking, sightseeing, water skiing, swimming, camping and other. In December of 1986, for example, of the 6421 visitor days, 4747 were related to sightseeing. Or, as is more likely, this is traffic along the State Highway over Abiquiu dam and it is probably high by a factor of 2 because the count likely counts many cars twice. At some Corps of Engineers facilities, cars may be counted three or more times because of utilization of local grocery stores. In December 1986, there were also 55 visitor boating days, 291 visitor fishing days and 67 visitor camping days. These may be high by a factor of two. It is evident, it seems to me, that the 733,000 figure obtained by the State Engineer from the Corps of Engineers is not quite what it seems to be on its face.

The increase in visitor days at Lake Abiquiu may not be a function of the availability of a recreational pool but rather caused by simple increase in population. From 1964 to 1979, visitors increased from 24,700 to 104,000. In 1981 after an increase in storage was authorized the actual visitors decreased from 167,677 in 1980 to 136,336 in 1981 and, I am told, it was likely because the boat launching ramp was inundated by the rising water. This suggests that approximately 30,000 visitor days during 1981 would have been attributable to fishing alone. The remainder were likely predominantly sightseers.

Certainly, personal examination of the data suggests it is non-homogeneous and inconsistent and that the actual recreational use of Lake Abiquiu is less straightforward than the State Engineer would suggest. A more detailed study by the Corps is warranted before anyone places complete reliance on the number of visitor days.

Regarding the recreational use of San Juan-Chama water in Lake Abiquiu, let me observe further that the Appelate Court in Jicarilla Apache Tribe v. United States (657 F.2d 1126, 1137, 1981) stated:

> "... we have not ruled on the question of whether the storage of water in Elephant Butte Reservoir solely for the purposes of recreation would constitute a beneficial use. We are satisfied, however, that such use of San Juan-Chama water by Albuquerque even if recognized as beneficial under state law would be at odds with the federal statutes authorizing the SanJuan-Chama project."

further at page 1138, the court stated:

> "But assuming that such storage does indeed satisfy the requirements of New Mexico law, it is our view that the applicable federal statutes prohibit storage of San Juan-Chama water solely for recreational purposes, because it is out of harmony with the entire basic philosophy of this project, if for no other reason."

further at page 1139, the court stated:

> "... storage for recreation fails to meet meet the guidelines." of 43 U.S.C. 620(g).

and

> ""It logically follows that recreation itself is not a primary purpose." of 43 U.S.C. 620(g). "Thus, water areas are not to be created for recreational purposes."

and at page 1141, the court stated:

> "Rather, the background materials show that the statutory language was deliberately intended to make recreation and fish and wildlife benefits incidental to other primary uses of the water."

the comments of our State Engineer notwithstanding. I believe the higher authority on matters of public policy and conscience lie with the Court as the arbiter of social change not with appointed State Officials. The State Engineer would do well to conform his comments to the language of the Court rather than his own expressed opinion for at trial, he made the same arguements which were found to be without merit by the court in its opinion bearing in mind the enormity of the waste.

With regard to our "wasteful" release of water to the Lower Basin as characterized by the State Engineer, let me say, in my humble judgement, it would be far better to sell the "1,121,900 acre feet of 'excess' water" (op cit at 1133) to Texas rather than to simply release it unsold. I have clients who currently wholesale water to water companies for $0.37 per 1000 gallons. At that rate, the City of Albuquerque and the State of New Mexico could gross a minimum of $135,261,915. After payment of approximately $50 million to the Bureau of Reclamation for project costs, the profit to the City of Albuquerque would be about $85 million. This is $85 million of new money which when multiplied by a reasonable economic multiplier of say 5 would generate $425 million in economic activity and about $21 milllion in gross receipts taxes to the State.

Regarding the State Engineer's comments on the feasibility of recharge he states that the water needs to be desilted, then pumped at great cost and then injected into injection wells. Of course this is one engineering solution which points up the problem of consulting one engineer. Indeed these types of artificial recharge systems do exist but they are not the simplest and least expensive.

Ideally, one would take an arroyo such as Tijeras arroyo and build a series of low, step-wise embankments across the arroyo thereby creating infiltration basins. The San Juan-Chama water to feed the infiltration basins might be diverted from the main stem of the Rio Grande via an aqueduct; perhaps at Cochiti which itself is a siltation basin.

Water cascades from the upper basins to the lower basins. The upper one or two basins are used as siltation basins and annually they are drained and water is temporarily bypassed to lower basins. The silt is removed and the basin bottom is scarified to restore its permeability following which the system is returned to normal operation. The Nabateans of the ancient Negev allowed not the escape

of a drop of rainfall through the construction of untold numbers of such low impoundments.

In another, and possibly complimentary plan, water is discharged from the same aqueduct at low discharge rates into many of the arroyos which drain the mountains. Silt which may deposit in these channels is periodically washed to the Rio Grande by flood events occurring in the catchments of these natural channelways.

The point to be made here is that the State Engineer has conceived at least one artificial recharge scheme and I have conceived another. Proper engineering and legal studies and cost analysis and operations research studies must be concluded to determine which of the methods is the most cost effective and conserves the greatest amount of water and not which method presents the greatest engineering challenge and hang the cost.

Then there is the hydrologically incorrect statement by the State Engineer that the increased hydrostatic head caused by the artificial recharge would increase the discharge to the Rio Grande.

In 1986, the City of Albuquerque diverted 105,000 acre feet of water. That is more than the 46,300 acre feet (48,200 acre feet less channel loses) of San Juan-Chama Project water owned by the City. Of that, the U.S. Geological Survey estimates that 25 percent or 26,250 acre feet was removed permanently from storage within the aquifer. Well, 105,000 is more than 46,300 so I ask you how the San Juan-Chama water could escape to the river. Most if not all of it is subject to capture by Albuquerque City wells before it reaches the river. In any event, by the time the City constructs an artificial ground-water recharge facility, 10 years may have passed and the cumulative depletion of ground water in storage could be more than 262,500 acre feet (if the U.S.G.S. estimates are correct) and the San Juan-Chama water will be completely used in replenishing that which was removed from storage. In actuality, the discharge to the Rio Grande will decrease rather than increase in contrast to the opposite assertion by the State Engineer.

The State Engineer has developed elaborate accounting procedures to account for all of the drops of water within the Rio Grande Basin. Indeed an elaborate accounting procedure had been developed to store and recover San Juan-Chama water in Elephant Butte for 40 years. I find it hard to believe that even accepting the argument of the State Engineer that higher hydrostatic head could cause increased ground-water discharge that the State Engineer would not find a method of accounting to preserve and capture all of the water legal due to New Mexico. It is technically feasible to do so.

I also do not follow the reasoning of the State Engineer when he says that New Mexico would be in violation of the Colorado River Compact and the Upper Colorado River Basin Compact. The San Juan-Chama water is ours to do with as we like under 43 U.S.C. 620(a) as interpreted by the court (op cit, 1144) where it said:

> "The language of section 620(a) was not intended to prohibit storage of project water by contract purchasers after delivery. However, such storage must be pursuant to authorized uses of project water. We have expressed our viewpoint previously that relevant federal law does not prohibit storage so long as it is not solely for recreational purposes."

If New Mexico chooses to recharge the water and to thereby conserve it, that is our right under federal statute and case law.

In conclusion Senator, I am very greatly concerned over the lack of adequate long term water management policies for the water future of our state. And plans which have been conceived, in my view, have not been subject to critical review. No thought was given by the State Engineer or the Bureau of Reclamation to the egregious waste of our precious water which would have resulted from the storage of San Juan-Chama water in Elephant Butte. No calculations were carried out by the State Engineer to determine the increase in hydrostatic head referred to in his August 12, 1987 letter to you. No thought seems to have been given to the economic benefits of selling our water to downstream users on short term contracts if we can't use it or have no place to put it to avoid waste. Should one state or one State Engineer be allowed to set policy which while not immediately benefiting New Mexico should be detrimental to American Citizens in the State of Texas?

Are the laws sufficiently flexible to allow the State of New Mexico to sell water on a short term contract to downstream users which have water needs, while they search for longer term solutions of their own? Should we not be addressing our attention to positive legislation which will allow flexibility in the various interstate stream compacts to allow for interstate cooperation when a clear and present public need exists to further the economic strength of our country and provide for the public welfare of all Americans wherever resident. If the Colorado River Compact is violated by any proposed recharge scheme, is it not more positive to find ways to amend the Compact to allow such an activity than to waste the water because neither Congress nor the State Engineer nor the State legislatures could foresee the changes in technology, water distribution needs and water management methods?

At present, it is acknowledged that the City of Albuquerque and other governmental entities which contracted for San Juan-Chama water can not use this water now or even perhaps in the foreseable future. I myself have clients who would jump at the chance to buy San Juan-Chama water and who have a present need for it. They are willing it buy it for cash. These cash payments would contribute towards retiring any outstanding debt for the construction of the civil works. These clients are in the Rio Grande Valley and no doubt San Juan-Chama water will be used to meet their needs eventually. Is it not better to sell them San-Juan Chama Water Rights now and have them dedicate the water rights back to the City of Albuquerque or buy them from the City of Taos and dedicate them to the City of Albuquerque or buy them from Espanola and dedicate them to Los Lunas and so forth?

Thank you for the opportunity to present this supplemental material for the record. Should you wish additional information, I am at your service.

Respectfully submitted,

William M. Turner

Dr. William M. Turner
President

Encl.: Articles relating to water recharge.

cc. Senator Jeff Bingaman

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR KEN SCHULTZ
CHIEF ADMINISTRATIVE OFFICER GENE ROMO
DEPUTY CAO PUBLIC SERVICES FRANK MARTINEZ
DEPUTY CAO PLANNING DEVELOPMENT BILL MUELLER

September 15, 1987

The Honorable Pete V. Domenici
The Honorable Jeff Bingaman
United States Senators
Washington, D.C. 20510

Dear Senators Domenici and Bingaman:

We have prepared the following response to your request for additional detail on the City's certain or possible needs for storage of water over and above presently authorized San Juan-Chama water storage.

City water resource management, including management of the San Juan-Chama project, is just now transitioning from being dealt with on a status quo/near term basis to looking much further down the road to possible major changes in the City's water delivery configurations and water resource management strategies. Contrary to Congressman Richardson's impression of too much long range planning, the City, since it started receiving San Juan-Chama water in the early seventies, has in fact been dealing with the water on an immediate or near term basis. Our files are replete with records of attempts (some successful and some not) to find storage and beneficial uses for the water in the awkwardly long interval the City has no direct need for the water. You are well aware of Congressional authorization of permanent storage of up to 200,000 acre-feet of San Juan-Chama water in Abiquiu which has been of great value to the City and State.

With regard to City San Juan-Chama water, the transition from short range to long range focus has been prompted by at least three events: the-soon-to-be completed Corps of Engineers' Abiquiu Storage Study, the City decision stemming from that study and the introduction of Senate Bill 850. The extended wet cycle the region is presently experiencing has probably also hastened the shift of the City's focus. These events dovetail with the City's present activities to create a long term water resource management program. We have learned that the aquifer on which the City is located is not necessarily the boundless and geohydrologically homogenous source (I alluded to the drawdown of water levels in City wells at the July 27 hearing) that has been the premise of past master planning. Present City water right holdings (including the 42,800 acre-feet San Juan-Chama allotment) are inadequate to supply sufficient water for certain population growth that the City's water service area will experience. The enclosed Water Resource Management Strategy (WRMS) lists the basic tasks that the resource management program will address.

The City has determined as a result of information developed and gained in the Corps storage study that additional storage in Abiquiu in the short term cannot be justified. On the other hand, the introduction of S. 850 has hastened the City's need to look at the future need, if any, for additional surface storage of either its San Juan-Chama water or other water supplies that might be available to the City in the future. Since we have just embarked on a rethinking of this and related issues within the resource management study, any scenarios of need are necessarily speculative. We do feel that these issues will be much better defined five years from now.

Needs for storage in Abiquiu can be broken down into the two general categories of (1) immediate and interim storage for City San Juan-Chama water over what is presently available and (2) the much less defineable and uncertain need for carryover storage in the long term, possibly for native water or for trans-basin diversion water. These categories will be discussed in order. This letter will also comment on some aspects of the testimony at the July 27 hearing on Senate Bill 850 that we think either need clarification or correction.

Interim Storage for San Juan-Chama Water.

The first category of need - interim storage of San Juan-Chama water until it is required to offset City water system ground-water depletions - was covered fairly well at the hearing. As I stated at the hearing, given the costs, the City cannot presently justify seeking additional storage. A basic iteration of the City's need for storage is set out in an October 6, 1986, letter from the City to the Corps of Engineers.

> "This is in response to Mr. Coombes letter of August 15, 1986, asking the City for a statement of willingness to pay for additional storage of water in Abiquiu Reservoir based upon estimated costs for such storage enclosed with the letter.
>
> Based upon a current assessment of the City's water storage needs over time I am unable to justify commitment now of the City to payment of any of the estimated costs for storage which the Corps has prepared. The present and continuing need for a period of 30 to 40 years for additional storage space for City San Juan-Chama water exists as was set out in the March 20, 1986, letter to you. This storage would allow the City to take delivery of water that would otherwise be foregone and ultimately to put substantial quantities of it to beneficial use and thus have real economic gain by either sale or for City water system needs.
>
> The future possibilities of putting the stored and otherwise foregone water to beneficial use in the short term by sale is speculative at this point; putting the same water to beneficial use by the City water system is certain but 20 to 30 years in the future and, after several years of drawdown, there appears no continuing need for the additional storage. This makes the costs

(with or without the sunk cost element) that the Corps has estimated for the additional storage questionable when compared to the value received by the City (beneficial use of water otherwise foregone) due to the storage."

The critical and major difference in the costs of the existing storage as compared to those required for any additional storage relates to the necessary right-of-way acquisition. San Juan-Chama water presently is stored within the Abiquiu flood storage space that was already burdened by a flood flowage easement, leaving very little value in the title left with the landowners. This made the acquisitions from the various landowners of the additional easement necessary for permanent storage quite reasonable. Additional storage above the flood easements, on the other hand, would require land unburdened by the flood easement and whose value has been most probably enhanced by being near the reservoir. Just compensation requirements would correctly require any storing entity to pay these much higher amounts for acquisition.

The City has not easily or casually reached the decision which will in all probability result in the loss to the City and New Mexico of substantial quantities of water undeliverable for lack of storage space. The City's direct responsibility is to protect the interests of its ratepayers, both with regard to the costs they must pay and in maintaining a secure water supply into the future. By the end of this calendar year, City ratepayers will have paid $15,005,897 for the City share of the San Juan-Chama project (consisting of $10,197,800 for unsubsidized project repayment and $4,808,097 for operation and maintenance). We have received 418,000 acre-feet of water for this money up to this time for an average cost of $35.90 per acre-foot. Given the value of the project and the size of the ratepayer investment it was incumbent upon the City to take another look at use of Abiquiu for additional storage.

At the July 27 hearing both the Secretary of Natural Resources, Dr. Tom Bahr, speaking on behalf of the Governor and State Engineer, Steve Reynolds, referred to the "flat water" recreation potential and economic value of Abiquiu Reservoir with San Juan-Chama water. The City would consider participation in a State initiative of joint conservation/recreation storage of San Juan-Chama water in Abiquiu under a cost sharing formula that would be economically feasible from the City's point of view. We consider the State the proper body and forum for leadership in and assessment of the environmental, political, and economic issues that would be involved in this scenario.

To summarize our view with regard to interim use of additional storage for City San Juan-Chama water, the availability of additional storage would assist the City to more optimally use the water for benefit of City ratepayers, both in terms of its availability for sale and when finally needed by the City. We do not see such storage for San Juan-Chama water as affordable now or in the forseeable future absent a State initiative as suggested above, or an unexpected change in the economics.

Much of the testimony at the July 27 hearing regarding the City's immediate and interim problems of excess San Juan-Chama water pointed to artificial ground-water recharge as a certain and complete solution. A key element in the development of the comprehensive water resource management program, now underway, is a determination of the feasibility of artifical recharge. We should know within two to four years if it is feasible and will implement a recharge program, if so. (See pages 46-50 of the enclosed WRMS.)

A major element in the consideration of using presently available San Juan-Chama water for recharge is the present commitment of increasing allotments of the water, starting in the 1990's to offset City depletions on the Rio Grande. Thus, recharge will have to be justified on a limited determinate amount of water. This inherent limitation in the use of this water for recharge must be factored in with the engineering feasibility/capital expense, legal/institutional, and hydrogeologic compatability issues related to recharge before ultimate feasibility may be determined. Suffice it to say the City views it far from certain that ground-water recharge with San Juan-Chama water is feasible. On the other hand, we are aware of countervailing considerations that make artificial recharge very deserving of serious study and examination. Recharge could possibly stem or favorably reverse existent pollution plumes in the aquifer; it could ameliorate declining water levels in some City well fields to optimize the value of City investment in them; recharge would work to offset subsidence problems the urban area might otherwise experience. Just as we have determined that additional surface water storage in Abiquiu cannot be presently justified to the ratepayers, we realize that any recharge program for ground-water storage must be justifiable.

In addition to recharge, we continue to look at ways to put City San Juan-Chama water to beneficial use. A marketing study is underway. Large sales or loans to the Middle Rio Grande Conservancy and Elephant Butte Irrigation Districts are probable in upcoming dry periods. Direct use of the extra water by diversion and in the City water system is a possibility.

Need for Future Additional Storage

The development of the long range water resource management program may lead to a determination that the City or State will need storage in Abiquiu beyond amounts presently authorized after the City begins to use its full allotment of San Juan-Chama water annually. The City's present water rights and supplies total about 68,200 acre-feet - about 20,000 acre-feet in ground-water rights plus 48,200 acre-feet of San Juan-Chama water. At present consumption rates this supply will serve about 480,000 people, the population projected to be served in the early to mid 90's. Given the delay between the City's water depletions and the time these effects reach the river, projections indicate that the full City San Juan-Chama allotment will be needed annually about 2030 by a population of more than 900,000. Under this scenario, which envisions continued full reliance on ground-water, the City will be committed to acquiring an additional 60,000 acre-feet of consumptive water rights. Population growth will probably not level off at this time. A general perception has been that the City will offset its deficits, above existing rights plus San Juan-Chama water, by acquiring and retiring agricultural water rights. The City is rethinking this scenario.

The City's continued total reliance on the underlying aquifer's ground-water supplies is a major element for reconsideration in the resource management study. (WRMS, pp.18-21). To protect and maintain the existing ground-water resource, the City at some point might well need to convert to a mix of surface and ground-water diversions for its water system requirements. The City is concerned about the drawdown and low productivity of some of its critical wells and well fields, about possible movement and spread of ground-water contamination possibly enhanced by the City's ground-water withdrawals and about possible subsidence problems as have been experienced in other places with

over-drafting of ground-water aquifers. The resource management study will determine the optimal long term strategies for the City. These could conclude that the City should limit increases to ground-water diversions or even decrease them, leading to combined ground-water/surface water use by the City.

If the City decides to use surface water directly, the supplies will have to be double the actual consumption of water due to return flow. Thus the 60,000 acre-feet of consumptive water rights (on top of existing rights plus San Juan-Chama water) that will have to be acquired to serve a population of 900,000, if used by direct diversion will have to translate into 120,000 acre-feet of surface water available for diversion.

A concomitant to the use of surface water is adequate surface water storage capacity. The City now actively purchases rights for sale in the middle Rio Grande area and we are certainly not unmindful of the potential for mutually beneficial arrangements between the City and the Middle Rio Grande Conservancy District that could give the City additional surface water supplies. In addition, holders of Rio Grande water rights in northern New Mexico and Colorado have approached the City numerous times with offers; a San Juan basin water rights owner from northwestern New Mexico has also approached the City. While the mechanisms for City purchase of these rights are not in place and the water is not yet needed, such transfers to the urbanizing middle Rio Grande area as well as existing middle Rio Grande water rights will be needed in the years to come. To the extent that these rights are used by the City as surface water, adequate upstream storage will be needed to ensure regularity of supply. In an arid climate and given the wide fluctuations in annual precipitation, storage capacity for a supply of four to five times the annual surface needs would be prudent. Further, availability of storage would enhance the ability to store extra water in wet years. In 1986 and 1987 to date more than 1,300,000 acre-feet of water in excess of demand from downstream irrigators have been released from Caballo Reservoir, causing significant flood damage to agriculture downstream from El Paso. This damage and loss of water could not be avoided with current available storage. However, with additional storage, the losses and damages caused by a wet cycle in the future could be at least decreased and significant quantities of the water saved as carryover storage for either direct diversion or artificial recharge. Adequate surface storage capacity is a requisite to this scenario.

The City is aware that there are many factors that will have to be assessed in the direct surface water use option before need for more storage in Abiquiu would arise. The City may be able to continue exclusive use of ground-water supplies indefinitely. This appears to be the cheapest and most desireable alternative at this time if the aquifer is not thereby threatened. There also exist Rio Grande Compact questions that would have to be resolved before reliable storage of Rio Grande basin water in Abiquiu could be developed. If surface water is used, potentially available storage in Abiquiu and El Vado Reservoirs might suffice, depending upon the quantity of surface water use. A final factor is cost. Additional storage in Abiquiu will be very expensive (though certainly cheaper than a new reservoir) as will the construction of water diversion, treatment, and delivery facilities for direct surface water use.

The overriding consideration in all of this should be the protection and preservation of the Rio Grande basin aquifer, in spite of additional costs and impacts. There should be a goal of not passing on to the next generations decades of over-depletion of ground-water as is a major problem in large parts of neighboring west Texas and Arizona. Adequate surface water storage capacity might be the critical element necessary to avoid this eventuality in the urbanizing middle Rio Grande valley.

Conservation

You asked what water conservation initiatives the City might take and the extent the City might alleviate its water resource needs by conservation. Conservation will be a pervasive element in the City's water resource future. We cannot now say what strategies will be implemented when, nor have we established a goal or amount of water that could be saved by conservation. The use of rates to inhibit demand, requiring water efficient plumbing fixtures (including retrofit), encouraging native landscaping, and public awareness efforts are all strategies that will be looked at and implemented as appropriate. It must be understood that the City is given full credit for its return flow of treated wastewater effluent to the Rio Grande which is available for use by downstream irrigators. Accordingly there is no particular present incentive from a water rights point of view for the City to "conserve" water that otherwise returns to the River. But, if the City determines in the course of the Resource Study that ground-water is being over- drafted or will be with growth, the need to preserve the ground water supply will override the present administrative equality of Rio Grande ground and surface water.

Accordingly, a key element in assessing the need for and timing for various conservation measures will be in the City's determination of the safe sustainable yield from the Rio Grande Basin aquifer. As relates to the issues of S. 850, I think it safe to assume that as a matter of economic practicability the City would fully exhaust the potential for savings of the water resource through conservation before turning to the very expensive alternative of the use of surface water to preserve the aquifer.

Conclusion

Since the City and others are no longer seeking immediate additional storage in Abiquiu, there is no immediate threat to the status quo on the Chama. Given that the City is just beginning major rethinking of water management strategies, however, we feel it appropriate to request the Congress forego for the present the decision to give wild and scenic status to the Rio Chama between the Abiquiu spillway and the presently authorized flood storage level. You may be assured that the City will never seek storage unless it is justifiable and that the City appreciates and understands the intrusion that additional storage in Abiquiu could entail on the lower, beautiful and raftable portions of the Chama.

The City hopes that Congress will give serious consideration to your suggestion at the July 27 hearing, i.e., that the lower portion of the Chama be administered as a Wild and Scenic River but that it not be formally designated such. We think that formal designation would permanently eliminate the possibility of additional storage in Abiquiu.

We appreciate your consideration of these comments and will be happy to provide any additional information that you might need.

Respectfully,

L. A. Larranaga, Director
Public Works Department

LAL:CD:mk

Enclosures:

cc: U.S. Senate Energy and Natural Resource Committee
Congressman Manuel Lujan
Congressman Bill Richardson
Mayor Ken Schultz
City Councillors
Bill Mueller

City of Albuquerque
P.O. BOX [illegible] ALBUQUERQUE, NEW MEXICO 87103
1987 SEP 21 AM 8 32

MAYOR KEN SCHULTZ
CHIEF ADMINISTRATIVE OFFICER GENE ROMO
DEPUTY CAO PUBLIC SERVICES FRANK MARTINEZ
DEPUTY CAO PLANNING/DEVELOPMENT BILL MUELLER

September 18, 1987

The Honorable Pete V. Domenici
The Honorable Jeff Bingaman
United States Senators
Washington, D. C. 20510

Dear Senators Domenici and Bingaman:

Mr. L. A. Larranaga, Director, Public Works Department asked me to provide you more detail about the City's water resource situation to give additional background for consideration of S. 850.

Enclosed are: (1) a table of City of Albuquerque Water Rights Requirements and graphic representation of the same information, (2) tables showing City water rights holdings and purchases other than San Juan-Chama water, and (3) Bureau of Reclamation prepared reservoir summary tables for the month of August.

The Water Rights Requirements table though recently reformatted with minor changes, was prepared by City and State Engineer personnel in 1982 with assumptions as indicated in the legend following the table. This table represents the best projections of water use the City has at this time. Per capita per day consumption has in fact levelled off at about 230 gal instead of the anticipated 250, but the population projections are considered conservative. The table reflects purchases of water rights to date. The Resource Management Study will re-examine all of the assumptions and variables to provide better information for City planning purposes. The table indicates City use of San Juan-Chama water to offset City depletions to the Rio Grande in excess of its vested water rights starting in 1992 (in the amount of 165 a-f) and increasing until all is needed after 2028. San Juan-Chama water in storage after the full allotment is needed will be drawn down to partially offset the increasing requirements that are shown.

In addition to 17,875 a-f of vested rights derived from pre-basin pumping the City has acquired an additional 1555.52 a-f. Pending purchases of rights total about 733 a-f, dedication of rights from City land about 79 a-f and rights that derive from City service extended into out-of-City Valley land total about 1845 a-f. The City has a standing offer to purchase pre-basin or pre-1907 middle Ric Grande water rights. The current rate of acquisition is much less than the rate of increase in water consumption.

The Reservoir summaries show the amount of San Juan-Chama water in upstream reservoirs broken among the various contractors. The City as of the end of August had 162,011 a-f (out of 170,900 a-f allotment) in Abiquiu, 16,784 a-f in Jemez as part of the sediment pool, and 71,427 a-f in El Vado under agreements with the MRGCD. Authorized City storage of up to 50,000 a-f in Elephant Butte is presently unavailable because of its high water level. Additionally, the City has an obligation to make up evaporative losses to the 50,000 a-f Elephant Butte Recreational pool that was spilled at the end of last year. Heron Reservoir, built for the San Juan-Chama project, has capacity to store about 400,000 a-f of water. This capacity is used to meet ultimate annual San Juan-Chama project delivery requirements of 94,200 a-f, of which no more than 48,200 a-f is dedicated to ultimate transfer and delivery to the City. If the City is unable to take delivery from Heron in any year, the amount undelivered is not reserved. Given the essentially full or unavailable storage situation and relatively low sales, the City will likely be unable to take delivery of a large part of its 1987 allotment.

I hope this information is helpful. If you need additional information or explanation please let me know.

Respectfully

Gary Dawes
Policy Planner
Public Works Department/Planning Group

GD:mk

cc: L. A. Larranaga, Director, Public Works Department
William H. Otto, Assistant Director, Planning Group, Public Works Dept.

CITY OF ALBUQUERQUE WATER RIGHTS REQUIREMENTS (IN ACRE FEET)

Year	Projected Population	Diversion Demand	Gross Depletion	Return Flow	Net Depletion	Vested Rights Demand	San Juan/ Chama Water	Transport Loss to Albuquerque	San Juan/ Chama Balance	San Juan/ Chama Sales	Additional Rights Required
1980	357,000	89,284	47,221	44,642	2,579	2,579			48,200		
1981	365,100	102,228	55,203	51,114	4,089	4,089			48,200		
1982	373,200	104,496	57,473	52,248	5,225	5,225			48,200		
1983	381,400	106,792	59,804	53,396	6,408	6,408			48,200	1292	
1984	389,500	109,060	62,164	54,530	7,634	7,634			48,200	576	
1985	397,600	111,350	64,110	55,675	8,435	8,435			48,200	2713	
1986	407,100	113,988	67,253	56,994	10,259	10,259			48,200	605	
1987	416,500	116,674	69,972	58,317	11,655	11,655			48,200		
1988	426,000	119,295	72,761	59,647	13,114	13,114			48,200		
1989	435,400	121,927	75,585	60,963	14,622	14,622			48,200		
1990	444,900	124,587	78,300	62,294	16,006	16,006			48,200		
1991	455,100	127,444	81,554	63,722	17,832	17,832			48,200		
1992	465,300	130,300	84,685	65,150	19,535	19,430	105	6	48,089		
1993	475,400	133,128	86,523	66,564	19,959	19,430	529	31	47,640		
1994	485,600	135,985	89,739	67,992	21,747	19,430	2,317	136	45,748		
1995	495,800	138,841	92,403	69,421	22,982	19,430	3,552	208	44,439		
1996	504,800	141,361	96,114	70,681	25,433	19,430	6,003	352	41,845		
1997	513,700	143,854	97,808	71,927	25,881	19,430	6,451	378	41,371		
1998	522,700	146,374	100,986	73,187	27,799	19,430	8,369	490	39,341		
1999	531,600	148,866	102,705	74,433	28,272	19,430	8,842	518	38,840		
2000	540,600	151,387	105,833	75,693	30,140	19,430	10,710	628	36,863		
2001	549,800	153,963	107,761	76,981	30,780	19,430	11,350	665	36,185		
2002	559,000	156,539	111,129	78,270	32,859	19,430	13,429	787	33,984		
2003	568,200	159,116	112,958	79,558	33,400	19,430	13,970	819	33,411		
2004	577,400	161,692	116,404	80,846	35,558	19,430	16,128	945	31,127		
2005	586,600	164,268	118,281	82,134	36,147	19,430	16,717	980	30,503		
2006	597,700	167,377	120,496	83,688	36,808	19,430	17,378	1,018	29,804		
2007	608,800	170,485	124,439	85,242	39,197	19,430	19,767	1,158	27,275		
2008	620,000	173,621	126,728	86,811	39,917	19,430	20,487	1,201	26,512		
2009	631,100	176,730	130,764	88,365	42,399	19,430	22,969	1,346	23,885		
2010	642,200	179,838	132,756	89,919	42,837	19,430	23,407	1,372	23,421		
2011	655,400	183,535	135,799	91,767	44,032	19,430	24,602	1,442	22,157		
2012	668,600	187,231	138,534	93,616	44,918	19,430	25,488	1,494	21,218		
2013	681,000	190,703	141,269	95,352	45,917	19,430	26,487	1,552	20,161		
2014	695,000	194,624	145,950	97,312	48,638	19,430	29,208	1,712	17,280		
2015	708,200	198,320	148,089	99,160	48,929	19,430	29,499	1,729	16,973		
2016	723,000	202,465	151,830	101,232	50,598	19,430	31,168	1,826	15,206		
2017	737,700	206,581	154,917	103,291	51,626	19,430	32,196	1,887	14,117		
2018	752,500	210,726	158,025	105,363	52,662	19,430	33,232	1,947	13,021		
2019	767,200	214,842	161,112	107,421	53,691	19,430	34,261	2,008	11,932		
2020	782,000	218,987	164,672	109,493	55,179	19,430	35,749	2,095	10,357		
2021	798,500	223,607	167,685	111,804	55,881	19,430	36,451	2,136	9,613		
2022	815,000	228,228	171,150	114,114	57,036	19,430	37,606	2,204	8,390		
2023	831,400	232,821	174,594	116,410	58,184	19,430	38,754	2,271	7,175		
2024	847,900	237,441	178,059	118,721	59,338	19,430	39,908	2,339	5,953		
2025	864,400	242,062	182,668	121,031	61,637	19,430	42,207	2,473	3,520		
2026	882,400	247,102	185,704	123,551	61,753	19,430	42,323	2,480	3,397		
2027	900,400	252,143	189,084	126,071	63,013	19,430	43,583	2,554	2,064		
2028	918,500	257,212	192,885	128,606	64,279	19,430	44,849	2,628	722		

Year	Projected Population	Diversion Demand	Gross Depletion	Return Flow	Net Depletion	Vested Rights Demand	San Juan/ Chama Balance	Transport Loss to Albuquerque	San Juan/ Chama Balance	San Juan/ Chama Sales	Additional Right Required
2029	926,500	262,282	199,207	121,126	60,161	19,430	40,730	2,660			5,1
2030	954,400	267,265	202,141	123,632	68,509	19,430	40,730	2,660			8,5
2031	971,500	272,053	206,775	126,027	70,748	19,430	40,730	2,660			7,6
2032	988,600	276,842	210,274	138,421	71,953	19,430	40,730	2,660			4,
2033	1,005,600	281,603	217,992	140,801	73,191	19,430	40,730	2,660			5,761
2034	1,022,700	286,391	217,671	142,196	74,835	19,430	40,730	2,660			6,815
2035	1,039,700	291,152	222,065	145,576	76,489	19,430	40,730	2,660			8,069
2036	1,056,700	295,912	224,866	147,956	76,910	19,430	40,730	2,660			9,290
2037	1,073,700	300,673	228,483	150,336	78,147	19,430	40,730	2,660			10,516
2038	1,090,800	305,462	232,322	152,731	79,591	19,430	40,730	2,660			11,761
2039	1,107,800	310,222	236,042	155,111	80,931	19,430	40,730	2,660			13,101
2040	1,124,800	314,981	242,250	157,491	84,769	19,430	40,730	2,660			16,939
2041	1,151,800	322,544	248,528	161,272	87,256	19,430	40,730	2,660			19,426
204	1,178,900	330,152	254,170	165,066	89,104	19,430	40,730	2,660			21,274
204	1,205,900	337,694	259,992	168,847	91,145	19,430	40,730	2,660			23,315
2044	1,232,900	345,282	269,207	172,641	96,646	19,430	40,730	2,660			28,816
2045	1,260,000	352,847	275,104	176,423	98,767	19,430	40,730	2,660			30,937
2046	1,287,000	358,884	276,717	177,406	99,311	19,430	40,730	2,660			31,481
2047	1,314,000	356,764	278,263	178,782	99,681	19,430	40,730	2,660			31,851
2048	1,341,100	358,752	279,772	179,776	100,416	19,430	40,730	2,660			32,586
2049	1,368,200	360,740	281,747	180,570	100,973	19,430	40,730	2,660			33,143
2050	1,395,200	362,701	283,652	181,790	101,562	19,430	40,730	2,660			33,732
2051	1,422,200	367,461	286,504	183,771	102,053	19,430	40,730	2,660			34,223
2052	1,449,200	372,250	290,319	186,125	104,194	19,430	40,730	2,660			36,364
2053	1,476,400	377,058	294,072	188,519	105,553	19,430	40,730	2,660			37,807
2054	1,503,400	381,799	301,584	190,899	110,685	19,430	40,730	2,660			42,954
2055	1,530,400	386,560	304,302	193,280	111,022	19,430	40,730	2,660			43,292
2056	1,557,400	391,320	309,105	195,660	113,445	19,430	40,730	2,660			45,815
2057	1,414,500	396,109	312,087	198,054	114,033	19,430	40,730	2,660			37,250
2058	1,431,500	400,869	316,648	200,435	116,213	19,430	40,730	2,660			48,787
2059	1,448,600	405,658	320,450	202,829	117,601	19,430	40,730	2,660			49,971
2060	1,465,600	410,418	324,951	205,209	119,742	19,430	40,730	2,660			52,112

Legend:
1. Year
2. Projected Population: based on average annual increase of approx. 1.8%
3. Diversion Demand: gross pumpage assuming 250 gallons per capita per day
4. Gross Depletion: effect of gross pumpage on river
5. Return Flow: assumed to be 1/2 of gross pumpage
6. Net Depletion: gross depletion minus return flow
7. Vested Rights Demand: City owned rights used to meet depletion demand
8. San Juan/Chama Water: San Juan/Chama water used to help offset net depletion
9. Transportation Loss to Albuquerque: evaporation loss on S/C water from Abiquiu to Albuquerque
10. San Juan/Chama Balance: 40,200 acre feet minus columns 8 and 9
11. San Juan/Chama Sales: actual sales
12. Additional Rights Required: net depletion minus vested rights and S/C water

MAY 1982

CITY OF ALBUQUERQUE 1982 EFFECT STUDY

The City of Albuquerque provided this office with a population projection from 1980 through 2000 as well as a diversion demand which was based upon a per capita use of 250 gallons per day. The City also provided this office with estimates of diversion demand from the City system east of the Rio Grande and west of the Rio Grande throughout the projection period. Based upon the data provided by the City and certain assumptions made by this office, the following study was performed at the request of the City.

In order to compile the attached table, this office used certain assumptions relating to pumpage of existing and proposed wells in the City Municipal Supply System which are based upon the pattern of pumpage from all City wells from 1976 to 1981. Valley wells are assumed to have a 100% effect on the Rio Grande. Valley wells east of the Rio Grande were assumed to pump 20% of the total diversion demand for the east system up to their recognized capacity. Valley wells west of the Rio Grande were assumed to pump 2% of the diversion demand for the west system up to their recognized capacity. Additional demand is assumed to be met by vested, permitted and proposed mesa wells east and west of the Rio Grande which have a variable effect on the Rio Grande. This additional demand (over and above that which is met by the valley wells) was assumed to be pumped from the mesa wells in proportion to the percent of total capacity in the East and West Mesa wells. The study showed that the City has sufficient capacity in the wells east of the Rio Grande (valley and mesa) to meet the projected demand throughout the projection period. Further, the study showed that the City would require additional wells on the West Mesa by 1985 in order to meet demand on the west side. These additional West Mesa wells are assumed to be an average distance of 3.5 miles from the Rio Grande.

This study further assumes that the City of Albuquerque will continue to operate the sewage disposal system in the same manner as it operates today (direct return flow to the Rio Grande) and that 50% of the amount of water diverted by the City's municipal wells is returned to the Rio Grande through the sewage treatment and disposal system.

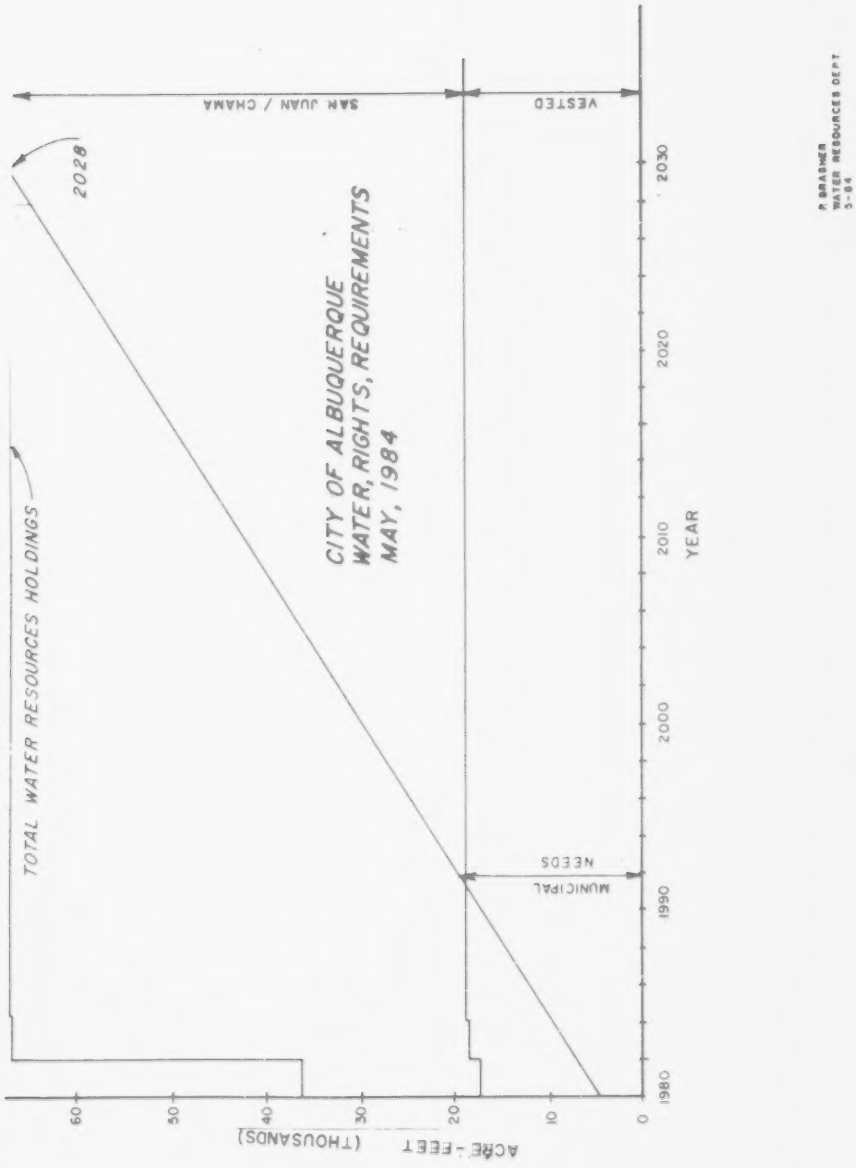
The City of Albuquerque has a vested right to divert water from wells which will ultimately have a 100% effect on the Rio Grande. The effect on the Rio Grande is variable with time due to past and projected pumpage of the City's vested wells and hydrologic characteristics of the aquifer. In 1956 the vested effect (depletion right) was 15,967 acre feet per year and ultimately the depletion right will amount to about 18,700 acre feet per annum. The City of Albuquerque also has an allocation of San Juan-Chama water amounting to 48,200 acre feet per annum.

As shown on the attached chart, this study reveals that the existing vested depletion right of about 18,700 acre feet per annum will be sufficient to offset the net depletion to the Rio Grande caused by City pumpage through the year 1990. After 1990 the City will be required to offset the additional net depletion to the Rio Grande by the release of contracted San Juan-Chama water. The San Juan-Chama water (48,200 acre feet per annum considered as on-site depletion) will offset the net depletion to the Rio Grande through the year 2025. After 2025 the City must acquire, retire and transfer or dedicate for retirement other valid existing water rights in order to offset the additional net depletion to the Rio Grande over and above the existing vested depletion right and San Juan-Chama water allocations.

D. N. Stone
District I

PRELIMINARY
SUBJECT TO CORRECTION

STATE ENGINEER OFFICE


CITY OF ALBUQUERQUE
WATER, RIGHTS, REQUIREMENTS
MAY, 1984
TOTAL WATER RESOURCES HOLDINGS
2028
SAN JUAN / CHAMA
VESTED
MUNICIPAL NEEDS
ACRE-FEET (THOUSANDS)
YEAR
0
10
20
30
40
50
60
1980
1990
2000
2010
2020
2030
P. BRABNER
WATER RESOURCES DEPT
5-84

UPDATE: 9/17/87

CITY OF ALBUQUERQUE CONSUMPTIVE WATER RIGHTS

Total Water Rights: 18,671.97 ac ft	- vested
719.26**	- purchased
39.29	- dedicated
0.00	- valley
19,430.52 ac ft	

Approved — Pending*

Vested Rights

17,875.00 ac ft	- 1957 State Engineer determination
378.00	- Police Farm
252.00	- South Broadway Refuse
70.39	- Treatment Plant
96.58	- Sunport Golf Course
18,671.97 ac ft	

Purchased Rights

94.57 ac ft	- 3/82	72.41 ac ft
25.81	- 4/83	8.82**
26.27	- 9/84	6.75**
45.11	- 10/84	13.64**
36.27	- 10/84	163.06**
9.62	- 10/84	468.30**
34.78	- 10/84	732.98 ac feet
21.04	- 10/84	
100.17	- 3/85	
12.58	- 7/85	
10.50	- 4/86	
72.16	- 5/86	
96.60	- 11/86	
45.08	- 12/86	
53.21	- 12/86	
35.49	- 3/87	
719.26 ac ft		

Dedicated Right
(on property owned by the City)

39.29 ac ft - Matthew Meadows	23.96 ac ft - Dietz Farm
	12.94 - Columbus Park
	14.10 - Treatment Plant
	28.18 - Glenway Park
	79.18 ac ft

Valley Rights
(household consumption from wells closed when owners connected to City system)

1804.80 ac ft
40.53**
1845.33

* Dedication of right has not yet been approved by State Engineer or seller has not yet returned contract.

** Indicates changes made since last listing.

File Reservoir Evaporation

United States Department of the Interior

BUREAU OF RECLAMATION
UPPER RIO GRANDE BASIN PROJECTS OFFICE
P.O. BOX 252
ALBUQUERQUE, NEW MEXICO 87103

IN REPLY
REFER TO:

SEP 03 1987

RECEIVED
SEP 8 1987
PUBLIC WORKS DEPT

Mr. L.A. Larranaga
Director, Public Works
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Dear Mr. Larranaga:

Enclosed are the monthly summary reports regarding San Juan-Chama Project water for El Vado, Abiquiu, Jemez Canyon, and Elephant Butte Reservoirs for the month of August. If you have any questions concerning the reports please call Larry Walkoviak at 766-1742.

Sincerely,

Charles A. Calhoun
Projects Superintendent

Enclosures

AUGUST 1987

ELEPHANT BUTTE RESERVOIR SUMMARY

DAY	WATER SURFACE AREA	ELEV-ATION OF WATER SURFACE	TOTAL CONTENT	SAN JUAN WATER CONTENT	RIO GRANDE WATER CONTENT	ELEV-ATION OF RIO GRANDE CONTENT	AREA OF RIO GRANDE WATER	EVAP-ORATION ON TOTAL CONTENT	EVAP-ORATION ON RIO GRANDE CONTENT	SAN JUAN-CHAMA EVAPORATION LOSS REC POOL	SAN JUAN-CHAMA EVAPORATION LOSS CITY POOL	SAN JUAN-CHAMA INFLOW/OUTFLOW REC POOL	SAN JUAN-CHAMA INFLOW/OUTFLOW CITY POOL	SAN JUAN-CHAMA END OF DAY REC POOL	SAN JUAN-CHAMA END OF DAY CITY POOL
1	36472	4405.83	2067376	0	2067376	4405.83	36472	660	660	0.0	0.0	0	0	0.0	0.0
2	36475	4405.84	2067741	0	2067741	4405.84	36475	894	894	0.0	0.0	0	0	0.0	0.0
3	36483	4405.86	2068471	0	2068471	4405.86	36483	511	511	0.0	0.0	0	0	0.0	0.0
4	36504	4405.92	2070660	0	2070660	4405.92	36504	757	757	0.0	0.0	0	0	0.0	0.0
5	36490	4405.88	2069200	0	2069200	4405.88	36490	563	563	0.0	0.0	0	0	0.0	0.0
6	36497	4405.90	2069930	0	2069930	4405.90	36497	745	745	0.0	0.0	0	0	0.0	0.0
7	36519	4405.96	2072121	0	2072121	4405.96	36519	873	873	0.0	0.0	0	0	0.0	0.0
8	36526	4405.98	2072851	0	2072851	4405.98	36526	746	746	0.0	0.0	0	0	0.0	0.0
9	36533	4406.00	2073582	0	2073582	4406.00	36533	746	746	0.0	0.0	0	0	0.0	0.0
10	36548	4406.04	2075044	0	2075044	4406.04	36548	-3066	-3066	0.0	0.0	0	0	0.0	0.0
11	36526	4405.98	2072851	0	2072851	4405.98	36526	639	639	0.0	0.0	0	0	0.0	0.0
12	36504	4405.92	2070660	0	2070660	4405.92	36504	511	511	0.0	0.0	0	0	0.0	0.0
13	36468	4405.82	2067012	0	2067012	4405.82	36468	745	745	0.0	0.0	0	0	0.0	0.0
14	36461	4405.80	2066282	0	2066282	4405.80	36461	681	681	0.0	0.0	0	0	0.0	0.0
15	36432	4405.72	2063367	0	2063367	4405.72	36432	935	935	0.0	0.0	0	0	0.0	0.0
16	36424	4405.70	2062638	0	2062638	4405.70	36424	1041	1041	0.0	0.0	0	0	0.0	0.0
17	36406	4405.65	2060817	0	2060817	4405.65	36406	998	998	0.0	0.0	0	0	0.0	0.0
18	36388	4405.60	2058997	0	2058997	4405.60	36388	892	892	0.0	0.0	0	0	0.0	0.0
19	36352	4405.50	2055360	0	2055360	4405.50	36352	933	933	0.0	0.0	0	0	0.0	0.0
20	36308	4405.38	2051001	0	2051001	4405.38	36308	911	911	0.0	0.0	0	0	0.0	0.0
21	36283	4405.31	2048460	0	2048460	4405.31	36283	952	952	0.0	0.0	0	0	0.0	0.0
22	36218	4405.13	2041935	0	2041935	4405.13	36218	887	887	0.0	0.0	0	0	0.0	0.0
23	36160	4404.97	2036145	0	2036145	4404.97	36160	-511	-511	0.0	0.0	0	0	0.0	0.0
24	36152	4404.95	2035421	0	2035421	4404.95	36152	-3614	-3614	0.0	0.0	0	0	0.0	0.0
25	36109	4404.83	2031086	0	2031086	4404.83	36109	75	75	0.0	0.0	0	0	0.0	0.0
26	36065	4404.71	2026733	0	2026733	4404.71	36065	487	487	0.0	0.0	0	0	0.0	0.0
27	36054	4404.68	2025673	0	2025673	4404.68	36054	421	421	0.0	0.0	0	0	0.0	0.0
28	36029	4404.61	2023150	0	2023150	4404.61	36029	588	588	0.0	0.0	0	0	0.0	0.0
29	36025	4404.60	2022790	0	2022790	4404.60	36025	630	630	0.0	0.0	0	0	0.0	0.0
30	36004	4404.54	2020629	0	2020629	4404.54	36004	651	651	0.0	0.0	0	0	0.0	0.0
31	35975	4404.46	2017750	0	2017750	4404.46	35975	651	651	0.0	0.0	0	0	0.0	0.0
								12932	12932	0.0	0.0	0	0	0.0	0.0
AVER	36335	4405.46	2053734	0	2053734	4405.46	36335								0.0

'TOTAL PRECIPITATION' = 3.31
'TOTAL EVAPORATION' = 10.82

ACCUMULATED USE OF WATER BY WINE GROWERS.=114.60 A.F.

AUGUST 1987
ABIQUIU RESERVOIR
SAN JUAN-CHAMA CONTENT

DAY	TOTAL SAN JUAN CONTENT	TAOS	CITY OF ALBUQUERQUE	CITY & COUNTY OF SANTA FE	COCHITI RECREATION POOL	DEPARTMENT OF ENERGY	TWINING	CITY OF ESPANOLA	MRGCD
1	187391.8	345.0	169580.9	12316.6	0.0	3864.2	15.0	911.0	339.0
2	187360.7	345.0	169552.7	12314.6	0.0	3863.6	15.0	910.9	339.0
3	187340.1	344.9	169534.1	12313.2	0.0	3863.1	15.0	910.8	338.9
4	187312.1	344.9	169508.7	12311.4	0.0	3862.6	15.0	910.7	338.9
5	187298.1	344.8	169496.1	12310.5	0.0	3862.3	15.0	910.6	338.8
6	186030.4	344.8	168231.2	12308.5	0.0	3861.7	15.0	910.4	338.8
7	184667.1	344.8	166868.9	12307.8	0.0	3861.4	15.0	910.4	338.8
8	183367.3	344.7	165570.1	12307.1	0.0	3861.2	15.0	910.3	338.8
9	181967.7	344.6	164175.1	12304.0	0.0	3860.2	15.0	910.1	338.7
10	180627.4	344.6	162837.0	12302.5	0.0	3859.8	15.0	910.0	338.6
11	179625.3	344.5	161837.4	12300.7	0.0	3859.2	15.0	909.9	338.6
12	179585.1	344.5	161798.0	12300.2	0.0	3859.0	15.0	909.8	338.6
13	179198.1	344.5	161412.0	12299.5	0.0	3858.8	15.0	909.8	338.5
14	178856.0	344.5	161070.2	12299.3	0.0	3858.7	15.0	909.8	338.5
15	178434.2	344.4	160672.9	12296.2	0.0	3857.8	15.0	909.5	338.5
16	178005.5	344.3	160228.7	12293.0	0.0	3856.8	15.0	909.3	338.4
17	177699.9	344.2	159927.3	12290.1	0.0	3855.9	15.0	909.1	338.3
18	177652.2	344.1	159884.4	12286.8	0.0	3854.9	15.0	908.8	338.2
19	177579.8	344.1	159849.8	12284.2	0.0	3854.0	15.0	908.6	304.1
20	177541.4	344.0	159815.3	12281.5	0.0	3853.2	15.0	908.5	304.1
21	177191.2	343.9	159468.2	12279.4	0.0	3852.5	15.0	908.3	304.0
22	177162.1	343.9	159442.0	12277.4	0.0	3851.9	15.0	908.1	304.0
23	177224.8	344.0	159498.4	12281.7	0.0	3853.2	15.0	908.5	304.1
24	177316.0	344.2	159580.5	12288.0	0.0	3855.2	15.0	908.9	304.2
25	177308.1	344.2	159573.4	12287.5	0.0	3855.0	15.0	908.9	304.2
26	177297.0	344.1	159563.3	12286.7	0.0	3854.8	15.0	908.8	304.2
27	177276.1	344.1	159544.6	12285.2	0.0	3854.4	15.0	908.7	304.2
28	177254.6	344.0	159525.2	12283.8	0.0	3853.9	15.0	908.6	304.1
29	177498.3	344.0	159770.6	12282.6	0.0	3853.5	15.0	908.5	304.1
30	178865.8	344.0	161140.1	12281.2	0.0	3853.1	15.0	908.4	304.1
31	179734.5	343.9	162011.0	12279.6	0.0	3852.6	15.0	908.3	304.0
TOTAL	179734.5	343.9	162011.0	12279.6	0.0	3852.6	15.0	908.3	304.0

AUGUST 1987
JEMEZ RESERVOIR EVAPORATION LOSS

DAY	WATER SURFACE AREA	ELEV-ATION OF WATER SURFACE	TOTAL CONTENT	SAN JUAN-CHAMA END OF DAY CONTENTS			TOTAL EST. SED. REP.	RIO GRANDE WATER CONTENT	AREA OF RIO GRANDE WATER	NET EVAPORATION LOSS			
				TOTAL	SED-IMENT POOL	CITY POOL				TOTAL LOSS	RIO GRANDE LOSS	SED. POOL LOSS	CITY POOL LOSS
1	1385	5196.87	29591	22146	5750	16396	2028	5417	553	36.4	16.3	5.2	14.9
2	1384	5196.84	29549	22124	5744	16380	2028	5397	552	37.1	14.8	5.8	16.5
3	1384	5196.84	29549	22101	5738	16363	2028	5420	554	37.1	14.8	5.8	16.5
4	1385	5196.86	29577	22091	5733	16348	2028	5468	557	33.1	13.2	5.2	14.7
5	1385	5196.86	29577	22065	5729	16336	2028	5484	558	27.5	11.0	4.3	12.2
6	1385	5196.86	29577	22044	5723	16321	2028	5505	559	35.5	14.3	5.5	15.7
7	1385	5196.86	29577	22033	5720	16313	2028	5516	559	17.0	6.8	2.6	7.5
8	1385	5196.86	29577	22019	5716	16303	2028	5530	560	22.6	9.1	3.5	10.0
9	1386	5196.90	29632	22005	5712	16293	2028	5599	565	22.6	9.1	3.5	10.0
10	1387	5196.92	29660	21992	5709	16283	2028	5640	567	22.7	9.2	3.5	9.9
11	1387	5196.91	29646	21977	5705	16272	2028	5641	567	25.9	10.6	4.0	11.3
12	1389	5196.99	29757	21963	5707	16276	2028	5746	574	-12.3	-5.0	-1.9	-5.4
13	1389	5196.99	29757	21965	5702	16263	2028	5764	575	32.4	13.4	4.9	14.1
14	1389	5196.99	29757	21958	5700	16258	2028	5771	575	10.6	4.4	1.6	4.6
15	1388	5196.95	29702	21935	5694	16241	2028	5739	573	40.5	16.8	6.2	17.6
16	1385	5196.87	29591	21911	5688	16223	2028	5652	568	40.4	16.7	6.1	17.5
17	1379	5196.68	29328	21888	5682	16206	2028	5412	553	39.4	16.2	6.0	17.2
18	1369	5196.40	28943	21865	5676	16189	2028	5050	526	38.3	15.5	5.9	16.9
19	1368	5196.38	28916	21841	5670	16171	2028	5047	525	39.1	15.0	6.2	17.8
20	1368	5196.36	28889	21814	5663	16151	2028	5047	525	43.9	16.8	7.0	20.0
21	1367	5196.34	28861	21792	5657	16135	2028	5041	525	35.9	13.8	5.7	16.4
22	1366	5196.31	28820	22121	5661	16460	2028	4671	496	-24.6	-9.5	-3.9	-11.2
23	1366	5196.30	28807	22136	5665	16471	2028	4643	494	-22.3	-8.1	-3.6	-10.6
24	1366	5196.31	28820	22149	5668	16481	2028	4643	494	-21.4	-7.7	-3.5	-10.2
25	1368	5196.38	28916	22147	5667	16480	2028	4741	502	4.3	1.6	.7	2.1
26	1369	5196.39	28930	22144	5666	16478	2028	4758	503	3.3	1.2	.5	1.6
27	1367	5196.33	28848	22139	5665	16474	2028	4681	497	8.8	3.2	1.4	4.1
28	1366	5196.30	28807	22125	5661	16464	2028	4654	495	21.5	7.8	3.5	10.2
29	1364	5196.26	28732	22109	5657	16452	2028	4615	492	24.7	9.0	4.0	11.7
30	1363	5196.21	28684	22094	5653	16441	2028	4562	488	24.6	8.9	4.0	11.7
31	1362	5196.19	28657	22433	5649	16784	2028	4196	457	24.6	8.8	4.0	11.8
										669.4	268.4	104.0	297.1
AVER	1376		29259	22760				4471	535				

'AVERAGE TEMPERATURE' = NOT COMPUTED

'TOTAL PRECIPATION' = 1.94
'TOTAL EVAPORATION' = 10.91

AUGUST 1987
EL VADO RESERVOIR
SAN JUAN-CHAMA CONTENT

DAY	TOTAL SAN JUAN CONTENT	MIDDLE RIO GRANDE CONSER. DISTRICT	CITY OF ALBUQUERQUE	CITY & COUNTY OF SANTA FE	PUBLIC SERVICE COMPANY OF N.M.	DEPARTMENT OF ENERGY	TWINING WATER & SANITATION DISTRICT	VILLAGE OF LOS LUNAS	CITY OF ESPANOLA	TOWN OF TAOS
1	156972.9	49432.0	71628.6	9100.8	10022.6	6701.4	101.0	2942.3	5923.6	1120.7
2	157166.3	49492.8	71716.7	9112.0	10034.9	6709.6	101.1	2945.9	5930.8	1122.1
3	157129.5	49481.2	71699.9	9109.9	10032.5	6708.0	101.1	2945.2	5929.5	1121.8
4	157119.5	49478.1	71695.4	9109.3	10031.9	6707.6	101.1	2945.0	5929.1	1121.8
5	157106.7	49474.1	71689.6	9108.5	10031.1	6707.1	101.1	2944.8	5928.6	1121.7
6	157083.5	49466.8	71679.0	9107.2	10029.6	6706.1	101.0	2944.4	5927.7	1121.5
7	157088.8	49468.4	71681.4	9107.5	10030.0	6706.3	101.0	2944.5	5927.9	1121.6
8	157119.7	49478.2	71695.5	9109.3	10031.9	6707.6	101.1	2945.0	5929.1	1121.8
9	157080.2	49465.7	71677.5	9107.0	10029.4	6705.9	101.0	2944.3	5927.6	1121.5
10	157048.5	49455.7	71663.0	9105.2	10027.4	6704.6	101.0	2943.7	5926.4	1121.3
11	157007.6	49442.8	71644.3	9102.8	10024.8	6702.8	101.0	2942.9	5924.9	1121.0
12	156980.4	49434.3	71631.9	9101.2	10023.0	6701.7	101.0	2942.4	5923.8	1120.8
13	156942.2	49422.3	71614.5	9099.0	10020.6	6700.1	101.0	2941.7	5922.4	1120.5
14	156906.8	49411.1	71598.3	9096.9	10018.3	6698.5	100.9	2941.0	5921.1	1120.3
15	156857.7	49395.6	71575.9	9094.1	10015.2	6696.4	100.9	2940.1	5919.2	1119.9
16	156806.0	49379.3	71552.3	9091.1	10011.9	6694.2	100.9	2939.2	5917.2	1119.5
17	156754.2	49363.0	71528.7	9088.1	10008.6	6692.0	100.8	2938.2	5915.3	1119.2
18	156703.8	49347.1	71505.7	9085.2	10005.4	6689.9	100.8	2937.2	5913.4	1118.8
19	156669.7	49336.4	71490.1	9083.2	10003.2	6688.4	100.8	2936.6	5912.1	1118.6
20	156632.7	49324.7	71473.2	9081.0	10000.8	6686.8	100.8	2935.9	5910.7	1118.3
21	156640.3	49327.1	71476.7	9081.5	10001.3	6687.2	100.8	2936.0	5911.0	1118.4
22	156626.9	49322.9	71470.6	9080.7	10000.5	6686.6	100.8	2935.8	5910.5	1118.3
23	156618.2	49320.2	71466.6	9080.2	9999.9	6686.2	100.7	2935.6	5910.2	1118.2
24	156697.0	49345.0	71502.5	9084.8	10004.9	6689.6	100.8	2937.1	5913.1	1118.8
25	156699.0	49345.6	71503.4	9084.9	10005.1	6689.7	100.8	2937.1	5913.2	1118.8
26	156679.4	49339.4	71494.5	9083.8	10003.8	6688.8	100.8	2936.8	5912.5	1118.6
27	156647.4	49329.3	71479.9	9081.9	10001.8	6687.5	100.8	2936.2	5911.3	1118.4
28	156354.1	49056.2	71466.5	9080.2	9999.9	6686.2	100.7	2935.6	5910.2	1118.2
29	154920.3	47644.4	71451.8	9078.3	9997.8	6684.8	100.7	2935.0	5908.9	1118.0
30	153989.4	46733.6	71438.4	9076.6	9996.0	6683.6	100.7	2934.5	5907.8	1117.8
31	153964.7	46726.1	71426.9	9075.2	9994.3	6682.5	100.7	2934.0	5906.9	1117.6
TOTAL	153964.7	46726.1	71426.9	9075.2	9994.3	6682.5	100.7	2934.0	5906.9	1117.6

Carlsbad Soil and Water Conservation District
114 S. Halagueno St. - Room 137, Federal Building - Carlsbad, NM 88220 - (505) 885-5751

1987 SEP 17 AM 6:04

Honorable Senator Pete Domenici
Room 434 Dirksen Senate Office Building
Washington, D.C. 20510

Honorable Senator Pete Domenici

The Carlsbad Soil and Water Conservation District has recently reviewed the proposed Senate Bill 350 concerning the Wild and Scenic Rivers Act for the Rio Chama River in New Mexico.

As a Conservation District we are very interested in the wise use and proper treatment of our natural resources throughout the State of New Mexico and the Nation.

We feel that all asperts that any actions will have on our natural resources either now or in the future must be carefully thought out. And we must not rush an actron through that will presently satisfy the desires of some but have adverse affects on most in the future.

We agree that portions of the Rio Chama River should be preserved in its natural and wild state. But we also feel that enough of the river can be preserved without including the reaches that would affect the full use of Abiquiu Dam.

This is a completed water control project paid for by the tax payers of this land and to limit its use in a way that may eventually cost the tax payer additional investments to construct another dam, only to satisfy the desires of a few would be a senseless act.

A Compromise should be reached that will provide some Wild and Scenic River on the Rio Chama but will allow full use of Abiquiu Dam.

Thank you for giving us the opportunity to voice our feeling and concerns on this matter.

Sincerely

Raymond E. Rogers
Chairman, Carlsbad SWCD

CONSERVATION DEVELOPMENT SELF GOVERNMENT

82-990 0 - 88 - 4

La Union
Soil and Water Conservation District

200 E. GRIGGS, FEDERAL BLDG., BOX D-206 • LAS CRUCES, N.M. 88001 • TEL. (505) 526-8421

1987 SEP 28 AM 3:08

September 22, 1987

Hon. Pete V. Domenici
United States Senate
434 Dirksen Senate Office Building
Washington, DC 20510

Dear Senator Domenici:

The La Union Soil and Water Conservation District would like to go on record as concurring with the testimony of Dr. Tom Bahr, New Mexico Cabinet Secretary of the Energy, Minerals and Natural Resources Department, concerning Senate Bill 850.

We would like to emphasize our support for his testimony that states Senate Bill 850 be amended such that the Wild and Scenic portion of the Rio Chama be limited to extend from the El Vado Ranch launch site downstream to an elevation of 6,353 feet. We support the present language directing the Bureau of Land Management and U.S. Forest Service to manage the 5.7 mile segment from elevation 6,353 downstream to elevation 6,252 in order to maintain its wild and scenic character. However, we recommend that additional language be added to bring this section of the bill more in line with existing state law. This language should state that management by the Bureau of Land Management and U.S. Forest Service should not interfere with operations of Abiquiu Dam for regulation of river flow for flood and sediment control and water storage for beneficial uses.

We would appreciate your consideration of this matter.

Sincerely,

Dan Lowry

Dan Lowry, Chairman
La Union SWCD

DL/lt

RIO CHAMA PRESERVATION TRUST

October 12, 1987

Hon. Jeff Bingaman
United States Senator
502 Hart Senate Office Building
Washington, D.C. 20510

Hon. Pete V. Domenici
United States Senator
434 Dirksen Senate Office Building
Washington, D.C. 20510

Gentlemen:

On behalf of the Rio Chama Preservation Trust, I wish to respond to the arguments that the State Engineer and Mr. Larranaga have put forward regarding water storage at Abiquiu Reservoir.

I have tried to extract from their statements every argument that tends to support additional water storage, either now or in the future. For each of their arguments there is an obvious rebuttal, sometimes several rebuttals. I have tried to state them briefly here.

As stated by Mr. Larranaga, there are two types of water that could conceivably be stored at Abiquiu: San Juan-Chama Project water, and native Rio Grande system water. Here are the arguments for each:

SAN JUAN-CHAMA WATER

(1) Additional storage of San Juan-Chama surplus water will enable Albuquerque to sell it in the future under short-term contracts. (Reynolds at 3, Larranaga at 2)

Response: It was not the purpose of the San Juan-Chama Project to put Albuquerque in the water speculation business. In any event, they have 200,000 acre feet of surplus to speculate with. To store any more would involve big costs for uncertain benefits. The City Council has made it clear it does not think that speculating in the water market is worth an investment of City money in Abiquiu storage.

(2) New Mexico should store San Juan-Chama water to prevent it from flowing to the Lower Basin states. (Reynolds at 3)

Response: This seems to be the biggest consideration for the State Engineer. Note that no one is suggesting that New Mexico might lose its future entitlement to San Juan-Chama water because of a postponement in deliveries. Interstate compact, federal statute and federal contract assure us that the City's entitlement is solid. The State

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Engineer is simply expressing an attitude that it is evil to let water escape across state lines. Note that the Colorado River Compact, Article III(e), specifically prohibits New Mexico from holding San Juan-Chama water in storage unless it can "reasonably be applied to domestic and agricultural uses." To store more water at Abiquiu, simply to withhold it from the Lower Basin, would invite a lawsuit by California, which is becoming more aggressive about its rights under the Colorado River Compact.

(3) More storage at Abiquiu would enhance flat-water recreation, which provided 733,000 visitor days in 1986. (Reynolds at 3, Larranaga at 3)

I have learned from the Corps that they calculate "visitor days" by placing traffic counters on the highways that pass Abiquiu Dam. By that measure, I "visit" Abiquiu twice each time I go to my farm at Coyote. The justification, according to the Corps, is that I am a "sight-seer."

Apart from that ludicrous statistic, it is questionable whether a larger Reservoir will produce more use. Not only is Abiquiu already a substantial pool, but flat-water boaters are served by Cochiti, El Vado and Heron Reservoirs nearby. Of course, any enlargement of the flat-water pool would be at the expense of white-water recreation on the Chama, a dubious justification for spending millions of dollars. As noted by the State Engineer, any recreational benefit would be temporary, because the storage would be temporary. The damage to the Chama, however, would be permanent, because of siltation.

If that rebuttal is not sufficient, I note again that there are legal barriers to storing San Juan-Chama water for recreational purposes: the Colorado River Compact, Article III(e), quoted above; and the decision of the federal 10th Circuit Court of Appeals in *Jicarilla Apache Tribe v. Albuquerque*, finding that recreation is not an authorized purpose for storage under the San Juan-Chama Project.

It is ironic that Larranaga speaks of the value of recreation at Abiquiu, when the City proposes eventually to draw down and eliminate the 200,000 acre foot pool. *Is the City of Albuquerque willing to commit to keep its water at Abiquiu permanently, to provide flat-water recreation?* That is the real question the people interested in flat-water recreation should be asking.

It is interesting that the advocates for San Juan-Chama storage have shifted from a "water supply" rationale to an "Abiquiu recreation" rationale. I think that bespeaks the weakness of the "water supply" rationale.

(4) San Juan-Chama water cannot be stored in the

aquifer because it is impractical, illegal, and prohibitively expensive for a short-term measure. (Reynolds at 3-4, Larranaga at 3-4)

Response: The State Engineer in particular is very committed to arguing that aquifer recharge is unworkable. This is unfortunate, because Albuquerque has a tremendous stake in protecting its aquifer, and this will require enhancement of recharge. Without a cooperative attitude by the State Engineer, this will likely be impossible.

Please note that if Reynolds is correct, and aquifer recharge is impossible and illegal, that does not make it any more attractive for Albuquerque to store San Juan-Chama water at Abiquiu. It simply means that Albuquerque will truly have no place to put its surplus water, either at Abiquiu or in the aquifer.

The State Engineer is too pessimistic regarding aquifer recharge. The argument that it violates the Rio Grande Compact in particular is extremely dubious. Why do we need to conclude that San Juan-Chama water injected into the aquifer to compensate for overdraft will increase the hydrostatic head? Even if it does, why does that mean that San Juan-Chama water will flow to Texas? Even if it does, how is that different from the proposed normal use of San Juan-Chama water, which is to release it into the Rio Grande to flow to Texas to compensate for groundwater pumping at Albuquerque? Of course the pessimism of the State Engineer is self-fulfilling, because he has the power to stifle any water program. Nevertheless, I attach as an exhibit the description of a recharge program which (I believe) avoids his objections and is much cheaper than storage at Abiquiu. Geohydrologist Bill Turner has put forward a different program which also appears to be workable and economical (with the caveat that nothing is workable if Steve Reynolds opposes it).

RIO GRANDE SYSTEM WATER

Perhaps it is not necessary to discuss this category, since the State Engineer states that the Rio Grande Compact renders it impractical to store native water at Abiquiu. The point is that under the Compact, native water stored at Abiquiu would be "locked up" when New Mexico is in debt to Texas, and this would surely include the drought years when storage might be useful.

Nevertheless, Larranaga places his greatest emphasis on storage of Rio Grande system water:

(5) Albuquerque cannot count on drawing its water supply from groundwater pumping, because of the potential for drawdown and pollution. Since the City may someday need to switch over to surface water supply, Abiquiu storage may be

needed. (Larranage at 4-5)

Response: First, the State Engineer has explained the barrier posed by the Rio Grande Compact, which works well enough in general that Texas, New Mexico and Colorado are unlikely to open it up to renegotiation.

Second, the City has available to it 200,000 acre feet of storage space at Abiquiu, which currently serves no purpose for municipal supply and will eventually be drawn down.

Third, for the City to switch over to surface water supply would be tremendously expensive, in terms of surface storage, water diversion, water treatment, and distribution. Much better for the City to spend those millions of dollars to create a system to recharge and protect its groundwater aquifer. As Larranaga says, very wisely, "The overriding consideration in all of this should be the protection and preservation of the Rio Grande basin aquifer, in spite of additional costs and impacts."

Fourth, a strategy of conservation would help the City avoid an overdraft on the aquifer. Larranaga dismisses this in a baffling statement that, since the City receives a credit for return flow to the Rio Grande, "there is no particular present incentive from a water rights point of view for the City to 'conserve' water that otherwise returns to the River." And yet if, for example, residents applied 500 acre feet less to their lawns, the City would pump 500 acre feet less from the aquifer and (under the formula of 50% credit for return flow) would require 250 acre feet less in Rio Grande water rights. That sounds to me like a strong incentive for water conservation.

(6) Additional storage at Abiquiu would have prevented loss of Rio Grande water spilled from Elephant Butte in 1985 and 1986.

Response: Water spilled from Elephant Butte because of a succession of extremely wet years. What would be the point of storing an additional 1.3 million acre feet in New Mexico (as Larranaga suggests) when we simply do not need it for beneficial uses? There is such a thing as too much water, and when we have it there is nothing evil or "wasteful" about letting it flow down the Rio Grande.

Larranaga laments the flood damage at Fort Quitman, Texas. That flood damage was a direct result of the loss of channel capacity in the Rio Grande, which in turn has resulted from seventy years of cutting off flows below El Paso. When you hoard floodwater in upstream reservoirs, downstream channels lose their capacity to handle exceptional flows. The answer to that problem is not to hoard more water upstream, but to let the floodwaters flow downstream.

Those are the only arguments for Abiquiu storage that I see in the letters from Reynolds and Larranaga.

TO SUMMARIZE, the case for new storage at Abiquiu is extremely far-fetched. Existing capacity of 200,000 acre feet will be unused and available in the future. The agencies now argue that San Juan-Chama storage is needed for flat-water recreation, but that faces formidable legal, political and economic hurdles. With regard to storage of Rio Grande system water, the Rio Grande Compact stands in the way. Albuquerque is best advised to focus its attention, and spend its money, on careful management and recharge of its groundwater aquifer.

We point out that the controversy over Abiquiu has finally forced the City of Albuquerque to take a serious look at its water future. So long as Public Works could simply warehouse water at Abiquiu, it did not need to look at the future.

This controversy, and the Hearings, have also exposed the fact that New Mexico has done no serious long-range planning for water resources. The 1976 study by the Bureau of Reclamation, cited by the State Engineer, is a good compilation of data and alternatives, but it is certainly not a plan. We simply lurch along from problem to problem.

One thing is certain: the Rio Chama is a valuable resource, used by real people right now for real recreation. The speculations about future water storage at Abiquiu are just that: speculations. We search in vain for a believable scenario that could justify expansion of the Reservoir and degradation of the Rio Chama.

Thank you for your attention to this statement. I will be delighted to answer any questions you might have.

Respectfully,

Phillip Wallin
Vice President

Exhibits:

Proposal for Groundwater Recharge
Sept. 15 letter from Larry Larranaga
Sept. 14 letter from S.E. Reynolds
August 20 letter from Phillip Wallin
Sept. 11, 1980 article by S.E. Reynolds, "Albuquerque's Water Supply Probably Best in Southwest"

PROPOSAL FOR ALBUQUERQUE GROUNDWATER RECHARGE

Phillip Wallin

October 12, 1987

The question has been raised: what should Albuquerque do with its surplus of San Juan-Chama project water? Since the surplus is temporary -- 48,000 acre feet per year at present, diminishing gradually until it disappears around 2030 -- the problem is also temporary.

One suggestion has been made repeatedly, that the surplus water be injected into the groundwater aquifer that underlies Albuquerque, to alleviate the overdraft that is lowering the water table on the East mesa.

The State Engineer has responded to this suggestion in an August 12 letter to Senator Domenici, saying that it would be prohibitively expensive to lay a pipeline from Cochiti Reservoir to the Sandia foothills, and to treat the surface water before injection into wells. The State Engineer also maintained that such a use of San Juan-Chama water would be contrary to the Colorado River Compact, since injection would increase hydrostatic pressure in the aquifer, causing other water to reenter the Rio Grande and flow to Texas. On the assumption that this other water would have to be accounted for as "San Juan-Chama water" and that the Colorado River Compact forbids that any such water flow to Texas, the State Engineer concludes that such a project would be illegal.

The purpose of this paper is not to debate the State Engineer's position, but to put forward a proposal for aquifer recharge which appears to avoid his objections.

Our proposal is not original. It originated within a prominent Albuquerque engineering firm and has been discussed extensively. The plan would utilize the existing infrastructure of the Albuquerque water supply system and would not require any extensive new capital investment. In particular, it should not require water treatment.

Albuquerque pumps its municipal water requirements from well-fields, some of which are near the Rio Grande. The rate of pumping is far higher during the three summer months than during the rest of the year. Distribution lines run from the wells near the Rio Grande uphill to the east.

The flow of the aquifer is west (toward the Rio Grande) and south (downstream) at a rate of something like one foot per year. The effect of pumping water at a rate that exceeds the natural recharge is twofold: to draw water out of the Rio Grande, and to lower the water table at the eastern edge of the aquifer.

Our proposal would be to pump additional water out of the wells near the Rio Grande during the nine winter months, pump the

water uphill through existing lines, and inject the water into the upper wells. This would draw additional surface water out of the Rio Grande, which would be replaced by releases of San Juan-Chama water from Heron Dam.

The intended results would be to reverse the overdraft on the aquifer, to halt the lowering of the water table on the East Mesa, to prevent structural changes in the aquifer that might jeopardize its storage capacity,and to prolong the useful life of wells on the East Mesa by lessening the "cone of depression" at those wells. A further benefit, albeit intangible, would be to utilize the City's allocation of San Juan-Chama water for municipal supply. This last benefit seems to matter a great deal to Albuquerque's Public Works Department.

The cost, of course, would be the energy cost of pumping the water uphill. We estimate that the average vertical lift would be 650 feet. Assuming an overall dynamic head of 1,000 feet, an off-peak hours cost of 5 cents per kilowatt hour, and an average annual pumping of 20,000 acre feet a year (beginning at 40,000 acre feet and decreasing eventually to zero), we estimate an average annual cost of $2.5 million. Offset against this would be energy savings from a higher water table on the East Mesa. Thus we can figure a net cost of perhaps $2 million per year.

This compares very favorably with a cost to the City of $10 million per year to secure 450,000 acre feet of additional surface water storage at Abiquiu Dam, the capacity that would be needed to store Albuquerque's surplus San Juan-Chama water. Storing the water at Abiquiu, where it would evaporate, would have no benefit for the City other than enabling it to take delivery of its surplus water and speculate in the short-term water market.

There is a question whether the water withdrawn from wells near the Rio Grande would be chemically suited for injection into the aquifer via wells. Fortunately these wells are deep and produce water of good quality. However, a study might be appropriate to address this issue.

Since the purpose of this program would only be to prevent an overdraft on the aquifer, it seems doubtful that it would increase the hydrostatic head and thus displace water into the Rio Grande, as contended by the State Engineer. Assuming, however, that he is correct, we must confront his assertion that this "return flow" into the Rio Grande would have to be accounted for as San Juan-Chama Project water, and that since it might flow to Texas the entire concept is banned by the Colorado River Compact.

Certainly the State Engineer has it within his power, as a practical matter, to defeat this (or any recharge) proposal by adopting a certain method of accounting and interpretation of the Compact. However, we would point out that what we propose here

is no different in principle than what Albuquerque proposes to do in the future with its San Juan-Chama supply: release it into the Rio Grande to compensate for net depletion of surface water flows in the Rio Grande as the result of municipal groundwater pumping. If, under our proposed program, there would be a certain return flow via the aquifer to the Rio Grande, then that is no different in principle from return flow via the sewage system. In either case the return flow should be accounted for as a credit to the City in determining net depletion of the Rio Grande, and lessen the City's obligation to release San Juan-Chama water from Heron Dam.

As is the case with any water-related proposal, the State Engineer has it in his power to defeat the proposal through interpretation of the various laws and compacts. He has taken a stand in favor of surface water storage of San Juan-Chama and against the alternative of aquifer recharge. However, since the thrust of this proposal is to benefit the City of Albuquerque, and to protect and replenish the aquifer upon which the City relies, we would hope the State Engineer could use his ingenuity to help implement this proposal (or some other recharge proposal) rather than to defeat it.

FREDERICK A. F. BERRY
CONSULTING GEOLOGIST

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1987 NOV -9 [illegible]

October 19, 1987

Senator Pete Domenici
U.S. Senate
434 SDOB
Washington, D.C. 20510

Dear Senator Domenici:

I testified at the Senate Energy and Natural Resources Hearing on the Wild and Scenic River designation for the Rio Chama (Senate Bill 850) on July 27, 1987. My testimony related to the geologic safety of Abiquiu Dam. My written letter-report to you on this subject dated December 5, 1986 was placed in the record of that Hearing.

My wife and I own the Gallina Canyon Ranch, which is directly across the Rio Chama from the Monastery of Christ in the Desert and extends up the Rio Gallina Canyon. We are one of the groups of private citizens that will be directly affected by the Rio Chama Wild and Scenic River designation. I have taken the trouble to obtain and prepare a composite of the views of the private citizens who own land or have Federal grazing and other permits on land within and adjacent to those lands along the Rio Chama that would receive Wild and Scenic designation. I enclose a copy of this composite and ask that it be placed, if possible, in the record of the Hearings on this proposed bill. Most importantly, I ask that our collective concerns be given serious consideration, as these concerns are very important to us.

These citizens whose views are reflected in the enclosed composite support Senate Bill 850 and a Wild and Scenic River designation for those lands stipulated in Senate Bill 850 but do have the very specific concerns indicated in the enclosed composite. These citizens would be strongly opposed to any reduction in that portion of the Rio Chama that would receive Wild and Scenic River designation as now stipulated in the original draft of Senate Bill 850. This opposition to any reduction in the Wild and Scenic designation is sufficiently strong that most of these citizens would be completely opposed to any Wild and Scenic designation whatsoever unless it includes the entire portion of the Rio Chama as now stipulated in Senate Bill 850.

Sincerely,

Fred Berry

COMPOSITE OF VIEWS OF PRIVATE LANDOWNERS AND FEDERAL GRAZING PERMITTEES
CONCERNING PROPOSED WILD AND SCENIC RIVER DESIGNATION
FOR RIO CHAMA, RIO ARRIBA COUNTY, NEW MEXICO

1 — Principal Concern:

Federal land adjacent to the Rio Chama given Wild and Scenic River designation by this bill shall remain under the jurisdiction of the Federal agency currently administering that land, and no regulations resulting from that designation shall be passed now or in the future which will change the way that Federal land currently is being used under the supervision of the appropriate Federal agency. More specifically:

a. Roads within that designation may continue to be maintained and improved under the supervision of the appropriate Federal agency.

b. Livestock grazing under Federal permits and supervision shall continue in the same manner as before on land that receives this Wild and Scenic River status. There shall be no additional regulations or restrictions regarding grazing on lands receiving this Wild and Scenic River designation.

c. Federal lands receiving such Wild and Scenic River designation shall not be fenced off separately from adjacent Federal lands.

2: There shall be a major effort by the various Federal, State, and municipal entities involved to regulate the collection and discharge of water at Abiquiu Reservoir so as to maintain as nearly as possible a stable pool level.

3: There shall be no condemnation of or easements across any privately owned land that falls within this proposed Rio Chama Wild and Scenic River bill as a result of this designation. Use of such privately owned land shall be the prerogative of the owner thereof and shall not be controlled by present and future regulation derived from or associated with such Wild and Scenic River designation.

4: The bridge across the Rio Chama on Forest Service Road 151, approximately eight miles west of US Highway 84, shall remain and shall continue to be maintained. Under no circumstances shall that bridge be removed as a result of its location within the Wild and Scenic River area without the construction of another similar or better bridge in the same general area (from the present bridge site upstream three-four miles toward the Monastery).

5: There shall never under any circumstances be an increase in the pool level of Abiquiu Reservoir to the point that State Highway 96 is flooded at the Cañones turnoff, that US Highway 84 is flooded south of the Ghost Ranch turnoff, or that Forest Service Road 151 and the bridge across the Rio Chama on Forest Service Road 151 are flooded.

6: There shall be a major effort to administer the recreational use of the Rio Chama by boaters and others so that the land, the roads, and the riverway are not abused by too much use by too many people. Already there are signs of

destruction from such increased usage along the Rio Chama.

7: Forest Service Road 151 should be made into a gravel, more weather-resistant road with responsibility and funds for its maintenance assigned to and assumed by some Federal, State, or county agency. This road is the takeout for all the Rio Chama boaters. The road becomes a river of mud after every rain. It is virtually destroyed by boaters if they are caught in such a situation; the boaters, in turn, are essentially unable to get to the highway under those circumstances except with extraordinary difficulty. The road destruction by the boaters imposes a severe problem on those who must use this road in their regular life (ranchers and Monastery).

8: There is an increased usage of several dirt roads that are crudely semi-parallel to the Rio Chama between Abiquiu Reservoir and El Vado Dam as a result of the sharply increased boating and recreational activity in this general Rio Chama Canyon area. Most of these roads are not within the proposed Wild and Scenic River strip and, of course, are not within the Rio Chama Wilderness. These roads are not now maintained by any agency or individual. Greatly increased destruction of these roads has occurred in the last several years as a result of the increased recreational use by the public of this general area. The public has little regard for the destruction that results from use of such roads when the roadway is mud. These roads, however, usually are critical to some long-standing ranching operation. It is requested that the county be asked to carry out some limited maintenance of these roads by grading them on an annual or bi-annual basis; funds for such limited maintenance would be supplied by the appropriate authority. The roads to receive such limited grading maintenance shall be designated by the various appropriate Federal agencies and the individuals who use those roads for ranching or access to their homes.

Prepared by: Fred Berry

Input by representatives of the groups or individuals listed below:

1. Ghost Ranch
2. Private land and cabin owners at the confluence of the Rio Chama with the Rio Cebolla
3. Monastery of Christ in the Desert
4. Chama Canyon Grazing Association (permittees on US Forest Service land primarily from the Youngsville-Coyote area)
5. Fred and Elizabeth Berry (owners of a private ranch near the junction of the Rio Chama with the Rio Gallina)
6. Grazing permittees on USFS or BLM land on the mesas adjoining the Rio Chama below El Vado Dam

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR KEN SCHULTZ
CHIEF ADMINISTRATIVE OFFICER GENE ROMO
DEPUTY CAO PUBLIC SERVICES FRANK MARTINEZ
DEPUTY CAO PLANNING/DEVELOPMENT BILL MUELLER

October 23, 1987

The Honorable Pete V. Domenici
United States Senator
434 Dirksen Senate Office Bldg.
Washington, D.C. 20510

Dear Senator Domenici:

Thank you for your letter of October 2, 1987, asking for City comment on State Engineer Steve Reynolds' views regarding the City of Albuquerque's need for additional storage in Abiquiu Reservoir. The key points you summarize from Mr. Reynolds' communication to you were addressed by my September 15 letter to you and Senator Bingaman sent following the July hearing on S. 850 in response to your earlier request for additional information. I am happy to provide you more detail on both points of agreement and some differences in perception and concern between the City and Mr. Reynolds.

You ask if we agree with Mr. Reynolds' conclusion that he sees "no scenario where the future needs of New Mexico will be met through additional storage at Abiquiu." We cannot say with certainty that any City needs will be met through additional storage at Abiquiu. However, we do feel that future additional storage at Abiquiu might be very desirable for the City and the overall public good.

As the September 15 letter stated, the City is concerned that its pumping of ground water might be or (more likely, as it increases in the future) will be overdrafting the Rio Grande aquifer. If that is occurring or will occur, as will be determined by the City's Resource Management Study, partial reliance upon surface water will be considered as one way to protect the aquifer. Reliable surface supplies necessitate adequate surface storage.

We recognize that even if the City should begin using surface water directly, additional space in Abiquiu might not be needed. Existing authorized space in Abiquiu and El Vado might suffice. Even if future Abiquiu storage for surface water supplies is "needed," the costs for it might be too high for it to be feasible economically. But, we feel the most difficult barriers to use of Abuquiu in this eventuality are the very real constraints posed by the Rio Grance Compact (we are not convinced they are insurmountable) and, if irreversible, a wild and scenic river designation on the Rio Chama to the elevation of the

presently authorized flood pool. You have speculated that ". . . attempting to undo a wild and scenic designation will prove an impossible task." Thus we see the possibility that, both in quantitative and qualitative terms, very real harm to the City and State's Rio Grande aquifer might not be preventable, given the institutional and political framework that might be in place governing the River.

I will now address each of Mr. Reynolds' key points as you have set them out.

1. "In the near-term, there would be considerable value in additional storage of San Juan-Chama water at Abiquiu, storage of water that might be resold to certain users, such as the wine growers. More importantly, the storage would enhance the considerable recreational value of Abiquiu Reservoir, which attracted some 733,000 visitor-days last year."

My September 15 letter reiterated the City's view of the value of Abiquiu storage for San Juan-Chama water. The primary value to the City and its ratepayers would be the use of the otherwise foregone water at such time as it would be needed for the City system. A more marginal and speculative value for such stored water would be its availability for one-time sales of large quantities to the Elephant Butte Irrigation District or borrowing by the MRGCD in times of water shortages. These values to the City do not equal the real costs of acquiring the storage. Lack of storage is not an impediment to the City's attempts to market the water on a annual basis to buyers such as the Wine Growers.

We have noted Mr. Reynolds' and State Secretary of Natural Resource Tom Bahr's statements regarding the flat water recreation value at Abiquiu Reservoir. This is a value that the City and its ratepayers would not be directly compensated for and cannot justify financing. Accordingly, as stated in the September 15 letter, the City would consider a cost-sharing initiative from the State that could conceivably make storage of additional San Juan-Chama water in Abiquiu economically feasible in the near term. Absent such an initiative I do not see the City being able to justify additional storage for its San Juan-Chama water in the near term.

2. "In the long-term, as Albuquerque and others begin to draw down their San Juan-Chama storage, no new source of water exists to require additional storage at Abiquiu. Interstate compacts prevent any greater water importation than now permitted as part of the San Juan-Chama project. The Rio Grande Compact makes it impractical to store additional native waters at Abiquiu."

The City is certainly aware that Mr. Reynolds' opinion and position on all things related to water in New Mexico are almost unrebuttable from the factual and institutional/legal points of view. However, as set out in the tasks in the City's Resource Management Study, the City will investigate to see what additional sources of water to the City might be feasible and available legally . We have no certain new sources in sight at this time, but feel that it is prudent to include this investigation as part of our study. You indicate that Mr. Reynolds stated the interstate compacts prevent any greater water importation than is now permitted as part of the San Juan-Chama project. I find no reference to

that in Mr. Reynolds' letter and believe the statement to be technically incorrect. Neither the Rio Grande nor Colorado Compacts limit the amount of New Mexico water that can be moved from the Colorado to the Rio Grande basin. There are limited amounts of Colorado River water within New Mexico's allotment that remain available for appropriation. Albuquerque should investigate the feasibility of acquiring a share of this water as well as the purchase of other Colorado River rights that might be delivered through the San Juan-Chama Project works. The City is aware of the difficulties and present impracticality of the use of Abiquiu to store native water under the Rio Grande Compact. These problems would have to be dealt with before the City or another user could justify using Abiquiu for storage of native water.

3. "Albuquerque clearly will need additional water. But its future water needs will, in all likelihood, be met through the acquisition of agricultural water rights in the Rio Grande Valley, rights that will be retired as Albuquerque extracts needed water by pumping ground water."

We agree with Mr. Reynolds that the main source of additional water the City will need and have to acquire will be Middle Rio Grande Valley rights. And indeed, the present scenario is to retire acquired surface rights to allow equivalent consumptive use of ground water. This scenario will be reconsidered in the course of the Resource Management Study.

At this time, the City's planned ultimate use of its San Juan-Chama water and the surface Rio Grande rights it will acquire and retire are to offset excess City depletions of surface flows in the River caused by ground water pumping. Put another way, San Juan-Chama water and retired Rio Grande Basin rights are to offset, to the benefit of surface flows, recharge of the aquifer from the surface flows. A key element of the Resource Management Study is investigation of the ground water/surface water relationship in more detail to better understand this interaction. Our current opinion is that the study will determine that the effects of large portions of City pumping on the River are several orders of magnitude slower than is currently measured by the State Engineer formula. Again, to put it another way, this will mean that City pumping is in fact not causing surface flows to replenish the basin at the rate that is presently assumed. The fifty percent return flow (groundwater to surface water) that the City is given credit for is already a given in terms of aquifer depletion. Thus, very serious overdrafting of the aquifer might be occurring even as State Engineer administrative requirements are being met.

If this is so, the appropriate use of San Juan-Chama water and acquired water rights by the City will have to be reevaluated. Both direct diversion of surface water and artificial recharge are options for reducing excessive depletion. Of course, the State Engineer and his ultimate determination will continue to be the dominant element in any course of action the City might take. Deleterious effects of overdrafting can be very expensive pumping, expansion and migration of pollution plumes, movement of marginal to bad quality water into presently sweet water, and land subsidence. Maximum flexibility for the City to head off these problems before they are too advanced would

greatly help those who must meet the future water delivery needs of our City. Accordingly, our Resource Management Study will look at the potential for these problems to occur and the options available for dealing with them. At least at the study stage, these options will include the direct use of surface water if sources and storage can be found. With the adoption of this option the City would undoubtedly continue to acquire Middle Rio Grande Valley surface rights, including from the MRGCD when possible. The change would be not to retire the rights but to use the water by surface flow diversion.

I hope this letter, augmented by my September 15 letter to you, clarifies the City's views regarding the points made by the State Engineer. If any questions remain we will be happy to respond. I would suggest that a meeting between you or members of your staff and me and my staff on the issues and concerns that S. 850 has raised would be a fruitful avenue of communication.

Sincerely,

L. A. Larranaga, Director
PUBLIC WORKS DEPARTMENT

xc: Mayor Ken Schultz
Senator Jeff Bingaman
Congressman Bill Richardson
Congressman Manual Lujan
Steve Reynolds, State Engineer
Tom Bahr, Secretary, Natural Resources Department
file

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87503
(505) 827-7835

1987 NOV 22 PM 1:40

GARREY CARRUTHERS
GOVERNOR

TOM BAHR
CABINET SECRETARY

ANITA LOCKWOOD
DEPUTY SECRETARY

November 16, 1987

The Honorable Pete V. Domenici
United States Senator
4239 Dirksen Senate Office Building
Washington, D. C. 20510

Dear Senator Domenici:

Please excuse this belated reply to your October 2 letter regarding S.850, the Rio Chama Bill. Your question of whether or not I agree with Mr. Reynolds that there is no scenario where future water needs of New Mexico will be met through additional storage at Abiquiu is obviously not an easy question and I have conferred with many people on the answer.

First of all, I have discussed this with Mr. Reynolds and I think you will find that he can picture some scenarios where additional storage at Abiquiu can meet future water needs. Although I can't speak for Mr. Reynolds, I suspect that his viewpoint on what can and can't be done at Abiquiu is greatly influenced by what he considers to be institutional constraints of present economics and attitudes of Rio Grande Compact Commissioners. I have the greatest respect for his opinions but I think even he will admit that given certain changes in economics and attitudes of water managers and politicians that anything is possible. My answer to your question is yes, I do believe that future water needs of the state can be met through additional storage at Abiquiu.

In support of that conclusion, I will point out some of the issues that I consider to be relevant. The first, and most obvious is that proponents of the bill as it is presently structured consider the lower four miles of the Rio Chama as the "heart and soul" of the bill, and furthermore, that it is their intention to "lock up the dam" to prevent any additional storage. If this special interest group could foresee no future scenarios for additional storage at Abiquiu, I doubt very much that they would expend such energy in their opposition of excluding the lower four miles of the Rio Chama from Wild and Scenic status. Certainly they have some

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Park and Recreation Division PO Box 1147 827-7465

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Energy Conservation & Management 827-5900
Mining and Minerals 827-5970

LAND OFFICE BUILDING 310 Old Santa Fe Trail
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CAMPUS STATION Socorro, New Mexico 87801
State Mine Inspector c/o New Mexico Tech 835-5458

scenarios in mind. I'll not try to second guess them but give you my own perspective:

1. New Mexico's Water Scarcity

Projections by nearly all knowledgeable water professionals indicate that water demands in our state will exceed available supplies somewhere near the year 2000. That's less than 15 years from now. Should there be any uncertainty over whether or not additional storage at an existing facility is needed for the future, a prudent individual would be wise to err in favor of additional storage. In a water short state, the presumption should be that we will need more storage, not the other way around.

2. The Rio Grande Compact

There is nothing in the language of the Rio Grande Compact that prevents the storage of main-stem Rio Grande water in Abiquiu. Such storage can be authorized by a unanimous vote of the Commission. Federal legislation could be enacted to authorize additional storage and for additional project purposes. With such legislation in place it would be possible, for example, to store Elephant Butte Project water in Abiquiu for ultimate irrigation of Elephant Butte Irrigation District lands if the Commission so approved.

I believe that Mr. Reynolds has already pointed out that the administration of such a scheme would be quite difficult but it is certainly not impossible. It is my opinion that despite the obvious difficulty in getting new federal legislation and Compact Resolutions that depart from previous practice, these actions would be far less difficult than getting the Congress to undesignate a portion of a federally listed Wild and Scenic River.

3. The El Paso Water Suit - Setting a Wrong Precedent

I have a very serious concern that if elected officials of New Mexico support a proposal that will preclude additional surface water storage in the state, we will be playing into the hands of the City of El Paso in their desire to obtain New Mexico groundwater. One of our primary arguments is that the "limited preference" language in the U. S. Supreme Court decision on Sporhase gives New Mexico first call on our internal waters for the reason that we will soon face shortages. For us to deliberately preclude new storage at an existing facility could be construed by El Paso, or any other out-of-state appropriator for that matter, that we do not have a need for the additional water that this storage would

afford, no matter how little it might be. I would suggest that you talk to Chuck DuMars on this important matter.

4. The El Paso Water Suit - If They Get Our Water

One outcome of the water dispute with El Paso is that they will be successful in their applications to appropriate groundwater from the Lower Rio Grande Underground Water Basin. Groundwater development on the scale that El Paso proposes will have a direct hydrological affect on the flow of the Rio Grande. As a condition of groundwater development by El Paso or anyone else, it will be necessary to augment the flow of the river to the extent that groundwater pumping reduces its flow. This is normally done by reducing surface water irrigation in those lands adjacent to the river. Rather than laying back and accepting the cannibalization of irrigated lands in the Mesilla Valley, we should be looking for ways to prevent this. One way is to provide for additional surface water storage in the system and Abiquiu is part of that system. I'm not suggesting that there will be enough water in the system every year or that additional importation will become a reality in the near future for Abiquiu storage to make a large impact on this problem but every additional drop counts.

5. San Juan - Chama Diversion

Interstate compacts do not prevent additional water diversions through the San Juan-Chama Project. This is a political problem within New Mexico, not a compact limitation. If water is not needed in other upper basin states, it would not be a violation of any compact if this water were used by any of the sister upper basin states, including diversion and storage in Abiquiu for beneficial use in New Mexico.

6. Economics

Mr. Reynolds correctly points out that an estimated cost of $22 per acre-foot per year, just to store additional water in Abiquiu, makes additional storage difficult to justify in economic terms. I should point out, however, that economics could quickly change if, for example, the State of New Mexico were to pay for a portion of these storage costs if we felt that doing so would be in the best long-term interests of the state. This leads me into the issue of recreation.

7. Recreational Storage in Abiquiu

The State of New Mexico recognizes the importance of flat-water recreation and the need for maintaining water levels for fish habitat. This administration supports authorization for a new

recreational pool in Abiquiu and based on my experience with State Parks we believe that user fees can pay a significant share of storage costs. As Mr. Reynolds points out, the need for storage of San Juan-Chama water in Abiquiu will decrease with time, and without additional authorization for a recreational pool boating and fishing opportunities for the future could be adversely affected during periods of extensive reservoir drawdown. I have asked my Parks and Recreation Division and the New Mexico Department of Game and Fish to look into the costs and benefits of establishing a permanent recreational pool at Abiquiu. Maintaining such a pool in conjunction with other flood control needs would be difficult, if not impossible, should the lower four miles of the Rio Chama be designated as Scenic. In view of the significant positive economic impact that flat-water recreation has on the state and the fact that this sector of the economy is growing, we cannot ignore this issue.

8. Storage Problems at Cochiti

Another scenario that could require additional storage at Abiquiu involves the outcome of litigation against the Corps of Engineers by the Cochiti Pueblo over water seepage problems below Cochiti Dam. One outcome of this case would be for the Court to order significant reductions in the amount of water allowed to be stored in Cochiti. Should this come about there could be an immediate need for additional storage in the system and Abiquiu would be a logical site. Using Abiquiu space for storing Cochiti water during high run-off periods would certainly back water into the proposed Scenic portion of the Rio Chama.

9. System-wide Conservation Management

It is well recognized that there is less evaporative water loss if surface water is stored in the cooler more northern regions of the state. For example, if 100,000 acre feet of water were stored at Abiquiu instead of Elephant Butte there would be a savings in evaporative water loss of over 2000 acre feet per year. As I mentioned earlier, there would be institutional problems to overcome but they could be handled easier than undesignating a Scenic portion of the Chama through an act of Congress.

10. State and Regional Water Planning

The last session of the New Mexico Legislature directed my Department and the State Engineer to get involved with water planning. The

Interstate Stream Commission has begun to contract for regional water planning studies and my office has begun the process of developing a comprehensive state-wide water plan. The Governor has directed our two agencies to closely coordinate these efforts. At the present rate of funding for the overall effort it will take five years or more to complete. Clearly, one aspect of this study will be to examine additional surface water storage opportunities and Abiquiu will be one site looked at in detail. While I am already confident about the need for additional storage at Abiquiu, the results of this planning effort should articulate that need in much more detail.

Let me close with what this administration considers to be the heart of this issue: That there should be deference to state law. As Mr. Reynolds and I both pointed out in our testimony on July 27, 1987, New Mexico already has a policy that expressly states in reference to the Rio Chama Scenic and Pastoral Act that "Nothing shall be construed to be incompatible with the regulation of river flow for flood control or beneficial uses of water." This law represents the will of the New Mexico Legislature and it was signed by the Governor in 1977. The propcsed federal legislation, as presenlty drafted, directly conflicts with New Mexico law in that regulation of river flow for beneficial uses would be significantly limited.

As you have heard before, the argument over the lower four miles should be a New Mexico debate, not a national debate. New Mexico has already debated the issue and it was settled ten years ago. Should the debate need to be revisited it should occur in Santa Fe, not in Washington, D.C. I have visited only briefly with the Governor on this issue but should the need arise I would strongly urge him to contact the Secretary of the Interior and the President of the United States to ask for a veto of the bill if it is not amended to exclude from Wild or Scenic status that portion of the Rio Chama that extends below the spillway elevation of Abiquiu Reservior.

Again, I apologize for the late reply to your request.

Sincerely,

Tom Bahr
Secretary

TB:rh

cc: Governor Garrey Carruthers
Steve Reynolds
Hal Brayman

Elephant Butte Irrigation District
Of New Mexico

1987 NOV 16 PM 1:29
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GARY L. ESSLINGER
Acting Treasurer-Manager

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BARNEY BICKLEY

16 November 1987

Honorable Pete Domenici
U.S. Senator
4239 Dirksen Senate Office Bldg.
Washington, D.C. 20510

Dear Senator Domenici:

The Board of Directors of the Elephant Butte Irrigation District, headquartered in Las Cruces, New Mexico, has been considering S. 850, introduced in the U.S. Senate by you and Senator Bingaman, March 26, 1987.

Our Board has considered the statement made by you at the time the bill was introduced.

We are concerned about the items you discussed in your floor statement and the questions you raised. We are particularly interested in the answer to your question concerning future use under S. 850 when you asked "which use prevails, storage or rafting?" You stated that you assumed that the Wild and Scenic purpose would prevail and that even under existing law that could prove troublesome in the year of unusually heavy flooding.

As you know, the water years of 1985, 1986 and 1987 have been years of high run-off on the Rio Grande. (In 1987 the Bureau of Reclamation released water in excess of beneficial uses in the amount of 650,000 acre feet from Caballo Reservoir, New Mexico. Agencies have been fortunate in being able to preserve human life below the various reservoirs, but have not been successful in preventing heavy damages to agricultural lands below Caballo Reservoir.)

You recognize that there has been discussion of the benefits of shifting 50,000 acre feet of water into Abiquiu Reservoir from Elephant Butte Reservoir downstream. This would provide flood control capacity not now authorized, in Elephant Butte Reservoir in order to protect Truth or Consequences, New Mexico below.

You mentioned that the City of Albuquerque may need an additional 100,000 acre feet of storage in Abiquiu Reservoir. You raise the question as to whether or not we want to preclude those actions forever, and you also raise the question of the saftey of Abiquiu Dam.

We are particularly interested in the answers to the questions you raise concerning how hard it would be to undo the designation of a Wild and Scenic river if we need to use storage later on. We agree that an attempt to undo a Wild and Scenic designation would probably prove to be an impossible task.

Our Board of Directors certainly respects the pleasure which is derived by many people in enjoying the beauty of the Chama River and rafting on the river. However, we think it is more essential that something be worked out whereby the use of Abiquiu Dam for it's original intended purposes of flood and sediment control not be endangered in any degree.

We oppose legally authorizing the control of any portion of Abiquiu Dam by the U.S. Forest Service or the U.S. Department of Agriculture or other.

We urge that the complete and final control of the use of Abiquiu Dam be reserved to the Corps of Engineers for flood and sediment control and to the Congress for determination of other possible uses.

We are not willing to accept that some possible flood reservation could not be worked out for people using Elephant Butte Reservoir and below which would involve the use of Abiquiu Reservoir.

We recognize that the pendulum in Washington has swung against the irrigated west. It appears to this Board to be unfair to be prohibited from using a portion of Abiquiu Reservoir and Dam for the storage of water for conservation and flood control other than that previously designated, as the Dam has been built and paid for by United States Tax Funds for purposes of flood and sediment control and therefore, additional charges should not be incurred by other users of the Reservoir based on the replacement value of the Dam.

The Board particularly agrees with your position in your opening statement at Albuquerque, New Mexico on July 2, 1981 where you conducted a hearing on the storage of San Juan-Chama water in Abiquiu Reservoir. At the hearing you said "THE BILL DOES NOT CONTEMPLATE ANY REPAYMENT OF CAPITAL COSTS, WHICH, OF COURSE, HAVE BEEN ALREADY MADE AND WERE FULLY JUSTIFIED FOR OTHER PROJECT PURPOSES."

This Board objects to any legislation involving the Wild and Scenic river which would interfere with the original authorization of the Corps of Engineers to build and operate Abiquiu Dam for flood and sediment control. We believe that the Corps of Engineers acting with the advice and consent of the Rio Grande Compact Commission as prescribed by law whould have absolute and ultimate determination on how and when Abiquiu Reservoir is used.

We agree with the testimony given by the Corps of Engineers on July 27, 1987, at Santa Fe, at the hearing on S. 850.

Our Board is convinced that Abiquiu Reservoir should be operated in high run-off years to have as it's first order of business the protection of life and property below Abiquiu Reservoir in New Mexico and Texas. It is our belief that the operation of the reservoir as contemplated under S. 850 would at times of flood periods on the Rio Grande endanger lives and property of people, cities, towns and villages below Abiquiu Reservoir and above Amistad Reservoir, Texas operated by the International Boundary and Water Commission.

It would be appreciated if at your convenience you inform us of the present status of the bill in question, and to provide us your answers to the questions previously raised by you and others in the light of today's circumstances. (We understand that the present authorization for the use of Abiquiu Reservoir goes first to sediment control of up to 63,000 acre feet and then to flood pool of 502,000 acre feet and then to a capacity of

200,000 acre feet to be used by the City of Albuquerque, for San Juan-Chama water. The remainder of the 1,212,000 acre foot total capacity of Abiquiu Reservoir should be available for authorized usage by the Congress.

There is no feeling whatever on the part of our Board of Directors that the beautiful Chama River and Abiquiu Reservoir should be denied for the pleasure and use of any recreational or environmental group at any time the river or reservoir is not required for previously or future authorized purposes.

Thank you for your consideration of the concerns raised by our Board of Directors.

Respectfully submitted,

John Salopek

JOHN SALOPEK
Board of Director, President

JG:JS/vg

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1580
ALBUQUERQUE, NEW MEXICO 87103-1560

REPLY TO
ATTENTION OF

October 19, 1987

Honorable Jeff Bingaman
United States Senate
Senate Hart Building
Room 502
Washington, DC 20510

Dear Senator Bingaman:

Thank you for your letter of October 1, 1987 concerning a recreation pool at Abiquiu Reservoir. Under the existing authorized project purposes and mandated operating criteria, it is possible that the reservoir could be completely evacuated. However, given today's abundant supply of water in the Rio Grande Basin and the projections for the future use of San Juan-Chama (SJ-C) water, an empty reservoir is not likely for at least ten to twenty years.

At the present time all of the water in storage at Abiquiu, with the exception of flood water which must be evacuated, is owned by the SJ-C entities. It is their water to do with as they wish and they may call for its release at any time.

There are a number of available options which would insure a minimum pool at the project. One would be Congressional authorization establishing a designated recreation pool in the project, and providing funds to purchase San Juan-Chama water from current owners for initial filling and annual evaporation replacement. An obstacle associated with this scenario is the lack of appropriate lands by the U.S. Army Corps of Engineers for this type of storage. Thus, Congressional authority and funding would also be required to purchase additional lands at the project. The city of Albuquerque currently holds the storage contracts for SJ-C water up to elevation 6220 M.S.L. The Corps' easements at the project are for temporary flood water and sediment retention only.

A second option is to store water in the unused portion of the sediment space. Authority for this is provided in PL 86-645 provided that such water originates from outside the Rio Grande Basin, i.e., SJ-C water. The water would have to be purchased by an interested entity along with the appropriate lands.

A third alternative would be for an appropriate entity to contract with the city of Albuquerque to maintain a minimum pool with the City's portion of its SJ-C allotment. A similar agreement is in effect at Elephant Butte in which the state of New Mexico has a contract to maintain a comparable pool. Storage of SJ-C water is, of course, already authorized at Abiquiu by PL 97-140.

I hope these alternatives will assist you in supporting your constituents' concern for recreation at Abiquiu Reservoir. If I can be of further assistance, please contact me.

Sincerely,

Kent R Gonser

Kent R. Gonser
Lieutenant Colonel, CE
District Engineer

Copy Furnished:

Honorable Jeff Bingaman
United States Senator
123 East Marcy, Suite 207
Santa Fe, New Mexico 87501-2018

JEFF BINGAMAN
NEW MEXICO

502 HART SENATE OFFICE BLDG.
WASHINGTON, DC 20510
(202) 224-5521
IN NEW MEXICO—1-800-443-8858

United States Senate

October 1, 1987

Lieutenant Colonel Kent Gosner
U.S. Army Corps of Engineers
P.O. Box 1580
Albuquerque, New Mexico 87103

Dear Colonel Gosner:

I met recently with residents of the Espanola Valley who raised strong concerns regarding the extreme fluctuations in the level of the Abiquiu Reservoir. I understand these fluctuations are a function of the conflicting responsibilities that require the Corps to manage the reservoir for federal "authorized" project purposes of flood control and water storage, and in accordance with the Rio Grande Compact. While recreation is not an authorized project purpose, I know the Corps recognizes the important role of recreation at the Reservoir.

A legitimate issue is whether, under existing law, there may occur a situation where we deplete the reservoir completely. If this scenario is possible, I hope the Corps can identify how it can be averted. I want to know what can be done, whether administratively or legislatively, to ensure that there is a relatively constant level of water maintained in the Reservoir for recreational purposes.

Please provide me a list of possible options that ensure a minimum level of water in the reservoir. I hope you can address this issue in the near future.

I look forward to your response.

Sincerely,

Jeff Bingaman
United States Senator

JB/mfj

ALBUQUERQUE (505) 766-3636 | LAS CRUCES (505) 523-6237 | ROSWELL (505) 622-7113 | SANTA FE (505) 988-6647

December 2, 1987

TO: Hal Brayman
FROM: Phillip Wallin
SUBJECT: 11/16/87 Letter from Tom Bahr to Sen. Domenici

I thought it might be useful to you if I were to point out some glaring errors in the letter from Dr. Bahr. Reviewing his arguments one by one:

Argument #1: Proponents of S.850 obviously think there is a scenario for more storage at Abiquiu.

We are indeed worried about schemes for water storage like Bahr's suggestion that Elephant Butte water be moved up to Abiquiu to lessen evaporation, not because Elephant Butte farmers need more storage but because Secretary Bahr is politically committed to trying to get it for them. We think that only Wild and Scenic protection can prevent some such frivolous schemes from proceeding.

Argument #2: All knowledgeable water professionals agree that New Mexico will soon be water-short.

Not so. Any knowledgeable water professional (including Dr. Bahr) recognizes that increasing demand for municipal and industrial water can be met by market forces, which will bring about conservation in agricultural water use and reallocation of that conserved water to M&I use. Dr. Bahr should be the first to agree, since he is a strong advocate of relying on "market forces."

Argument #3: "There is nothing in the language of the Rio Grande Compact that prevents the storage of main-stem Rio Grande water in Abiquiu."

Dr. Bahr, for some reason, totally misses the point made by Reynolds: that even if such water were stored at Abiquiu the Compact would prevent it from being utilized while New Mexico is in debt to Texas (which is almost always). This is in addition to all the other difficulties that Bahr alludes to, including federal legislation, accounting nightmares, Compact prohibitions and Compact Commission resolutions.

Dr. Bahr advocates storing water for the Elephant Butte Irrigation District at Abiquiu. He does not, however, make any case that the farmers need, or would be willing to pay for such storage, even if it were possible under the compact. Nor does he mention that such storage would necessarily be water of the Rio Grande Reclamation Project, accounted for under the Compact as "Texas" water, and shared with the El Paso County Water Improvement District No. 1. Sen. Domenici has specifically stated that he would not support storage of water at Abiquiu for Texas.

Argument #4: S.850 will contradict New Mexico's claims of water scarcity in the El Paso suit.

This is pure rhetoric. Tom Bahr himself recently stated, before the New Mexico Water Conference, that "our surface water supplies are fully developed." No one can disagree with that.

That obvious fact of life in the Rio Grande Basin does not in any way undercut New Mexico's need to utilize its own groundwater. Note that New Mexico has not argued, in the El Paso hearings, any statewide shortage of water.

Argument #5: If El Paso gets our water, they will need to use Abiquiu to store Rio Grande water rights to offset the effects of their groundwater pumping.

Abiquiu storage for the City of El Paso?! The obstacles to this scenario are too numerous to even begin to discuss, and raise the question whether Dr. Bahr is being serious. Even were El Paso to overcome the legal, political and other obstacles to storing water at Abiquiu, it would still need to buy up and retire agricultural land to get the water rights to be able to store at Abiquiu, so that the problem of "cannibalization" that Bahr foresees would not be avoided.

Argument #6: Additional importation of San Juan-Chama water would require more storage at Abiquiu.

We will leave it Bahr and Reynolds to argue over whether the San Juan-Chama Project could be expanded. Even if it were possible, legally, politically, economically and hydrologically, to expand the project, Dr. Bahr makes no case whatever for more Abiquiu storage. Why would Heron Dam not still be adequate to guarantee deliveries for the Project? Why would the existing 200,000 acre-feet at Abiquiu (which will be drawn not) not be adequate carryover capacity?

Argument #7: A permanent recreation pool at Abiquiu might be prohibited by S.850.

I am simply unable to understand what Bahr is trying to say here. Certainly S.850 does not regulate flood control. (It seems odd that in one breath Bahr talks about a bigger storage pool at Abiquiu, and in the next breath talks about taking action to prevent today's 200,000 acre-foot pool from disappearing.)

Argument #8: We might need to shift Cochiti flood control to Abiquiu.

This is another specious argument. If Cochiti cannot be used for flood control, then obviously that will create a need for greater flood control at Abiquiu. But so what? There is nothing in that scenario inconsistent with S.850.

Argument #9: We might want to move 100,000 acre-feet of Elephant Butte water up to Abiquiu, to lessen evaporation.

Under this rationale, we might wish to move all of Elephant Butte Reservoir up to Abiquiu. Again, Dr. Bahr makes no case at all that the Elephant Butte farmers need or would be willing to pay for any storage other than the 2.3 million acre-feet they already enjoy at Elephant Butte and Caballo.

Argument #10: Limiting storage at Abiquiu will limit our ability to plan for more storage there.

Dr. Bahr is very candid in saying he is "already confident about the need for additional storage at Abiquiu." Apparently the purpose of "planning" would be to come up with a rationalization for such storage. Why we should wait for such an exercise is not clear. The Corps of Engineers has just finished such an exercise and come up with no demand for more storage.

Argument #11: State law allows flooding of the Chama, and state law should prevail.

This, of course, is an argument by Dr. Bahr for no Wild and Scenic designation at all, not just against the last few miles. The present State act would allow, not just any federal facility at all anywhere on the Chama, but also any state or private pump-storage facility, diversion project, hydropower dam, etc. The fact is, the Rio Chama has been federalized by Abiquiu Dam and the San Juan-Chama Project. The only protection that means anything is federal protection, and that's why Bahr doesn't want it, because it would mean something.

Argument #12: This is a state issue, not a national issue.

Then why is Dr. Bahr threatening to have the President veto a bill that was co-sponsored by the New Mexico delegation?

Apart from the errors and distortions in Dr. Bahr's letter, a few things come through very clearly:

(1) He doesn't understand or respond to the point Steve Reynolds made about Compact restrictions on Abiquiu storage of Rio Grande water.

(2) He wants more storage at Abiquiu, particularly for the Elephant Butte Irrigation District.

(3) Apart from EBID and El Paso, he can't foresee any particular future need for storage at Abiquiu.

(4) He doesn't want federal protection for the Rio Chama.

Middle Rio Grande Flood Control Association

510 SECOND STREET NW, ROOM 221 • ALBUQUERQUE, NEW MEXICO 87102

December 2, 1987

The Honorable Pete V. Domenici
The Honorable Jeff Bingaman
United States Senators
Washington, D. C. 20510

Dear Senators Domenici and Bingaman:

At the 41st annual meeting of the Middle Rio Grande Flood Control Association, held in Albuquerque December 1, 1987, the pending Senate Bill S. 850 received considerable discussion. This legislation would designate approximately 31 miles of the Rio Chama, immediately downstream from El Vado Dam, as a component of the National Wild and Scenic Rivers System. The lower 4 miles of this river segment, which would be administered as a scenic river, is below the elevation of the spillway crest of Abiquiu Dam, that is, within the Abiquiu Reservoir area. The bill, as introduced, would thus effectively preclude the use of additional conservation storage capacity at Abiquiu Reservoir at any time in the future.

The members of this association can visualize many different situations involving water shortages, recreational needs, political problems caused by conflicts between Indian and non-Indian interests, or even the relative advantages of upstream storage over downstream storage that may make additional conservation storage essential at Abiquiu Reservoir at sometime in the future. Therefore, they believe that the downstream 4 miles of the river reach should not be included in S. 850.

We ask that you get the necessary changes made in S. 850, to exclude Abiquiu Reservoir from the limitations of a scenic river, and that it remains excluded when the conference committee meets to iron out the differences with H.R. 1839 which we understand has already been passed by the House of Representatives.

Sincerely,

James L. Sutton
President

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT CORPS OF ENGINEERS
P O BOX 1580
ALBUQUERQUE NEW MEXICO 87103-1580

REPLY TO
ATTENTION OF

Engineering and Planning Division
Planning Branch

Mr. Harold H. Brayman
United States Senate
Committee on the Budget
Washington, DC 20510-6100

Dear Mr. Brayman:

Thank you for providing the House-passed version of the Rio Chama Bill via your letter dated October 29, 1987. The statements I made in Santa Fe, New Mexico, at the July 27, 1987 field hearings remain consistent with the policies and positions provided to the Honorable J. Bennett Johnston by Mr. John S. Doyle, Jr., Acting Assistant Secretary of the Army for Civil Works. In light of the fact that the House Bill does not incorporate the concerns of the U.S. Army Corps of Engineers, as Mr. Doyle and I have expressed them, I would like to reinforce and expand on our concerns.

Section 1 of the House Bill would designate as wild or scenic the section of the Rio Chama from the El Vado Ranch launch site (about 1.2 river miles below El Vado Dam) downstream approximately 30.75 miles to elevation 6,283.5 feet msl. Using detailed maps, we have determined that the authorized flood storage elevation of 6,283.5 feet msl extends 15.5 river miles upstream from the dam, and the total river-mile distance from the El Vado launch site to Abiquiu Dam is 44.4 miles. Accordingly, the 30.75 river miles given in the Bill should be 28.9 miles. The discrepancy is about 1.85 miles. This error should be corrected to avoid confusion since the mileage figure given in the Bill extends almost two miles into the authorized flood control space.

Provisions of the House Bill call for substantial joint Forest Service and Bureau of Land Management control of the river between elevations 6,235 and 6,283.5 feet msl. This would impair Corps of Engineers authority and responsibility to make critical flood control and other water storage decisions, which are frequently required in time frames of a single day to a few hours. The "disclaimer" in the Bill, which indicates no prohibition of Abiquiu Dam operations for purposes authorized by law, is not adequate to protect those public interests for which the Corps of Engineers is responsible. For every decision, there would be

extensive debate as to whether or not that particular action is specifically covered under this disclaimer. Even if agreement is ultimately reached, there is rarely time for such lengthy discussion and coordination. The Corps of Engineers is fully capable of managing the area for both flood control and environmental purposes.

In further support of our concerns regarding the elevation interval from 6,235 to 6,283.5 feet msl, please note that the Corps of Engineers current flood easement at Abiquiu Dam extends to elevation 6,293.5 feet msl. This is to allow for combined backwater, surcharge, and other effects at times that we must operate to the maximum flood control pool. In fact, we are currently pursuing land acquisition to at least elevation 6,290 feet msl to provide for better overall shoreline protection. Thus, even an elevation of 6,283.5 feet msl constrains flood operations somewhat when backwater and other affects are considered.

Recently we have become aware of considerable interest in insuring that a permanent recreation pool is available at Abiquiu. Constraining reservoir storage to 6,283.5 feet would adversely affect this effort. The procurement of San Juan-Chama water for a permanent recreation pool remains possible so long as reservoir storage space is available. Under conditions of maximum storage elevation of 6,283.5 feet msl, the procurement and maintenance of a suitable recreation pool is virtually impossible until such time as the present 200,000 acre-foot San Juan-Chama water is all, or nearly all, evacuated. At such time, of course, water for a recreation pool would, very likely, no longer be available. Accordingly, opportunities for a recreation pool could be lost forever.

One last concern, which the Corps of Engineers shares with entities which store San Juan-Chama water in Abiquiu Reservoir, is the fate of the water supply pool in event of flood storage in excess of 302,000 acre-feet. Under conditions of the proposed wild and scenic designation, evacuation of San Juan-Chama water may be required as spring snowmelt forecasts indicated storage requirements in excess of 302,000 acre-feet.

I appreciate this opportunity to supplement and reinforce the concerns of the Corps of Engineers regarding proposed wild and scenic status, and proposed joint Forest Service-Bureau of Land Management control of selected sections of the Rio Chama. Please do not hesitate to contact me personally if I can be of further assistance regarding this issue.

Sincerely,

Kent R. Gonser

Kent R. Gonser
Lieutenant Colonel, CE
District Engineer

Senator BINGAMAN. Thank you very much.

Let me just say that some of the issues that have been raised there are, of course, ones that Tom Bahr did raise, and I think we want to explore them before we take action on the bill finally. I am not as persuaded, I guess, of the validity of the arguments that have been put out, but we do not have witnesses here to dispute them, really, so I think we will go ahead.

Congressman Richardson is the prime sponsor of this legislation on the House side, and it has passed the House of Representatives. We are very pleased to have you here and welcome your testimony.

STATEMENT OF HON. BILL RICHARDSON, A U.S. REPRESENTATIVE FROM THE STATE OF NEW MEXICO

Mr. RICHARDSON. Thank you, Senator BINGAMAN. First of all, let me thank Senator Domenici and you for the outstanding work you have done on El Malpais. For that reason and many others, I will not have my statement exceed two minutes, so I can go back to the House and get that passed.

Let me just state for the record—and I would like to insert my full statement in the record—that I think this is an important piece of legislation. I am not going to waste the Committee's time with the superlatives describing the Rio Chama. We have passed a clean bill in the House, and, of course, some of the concerns that Senator Domenici has raised we will take a look at.

Obviously we do not want to prejudice the State's option when it comes to dealing with water rights. We have had some conflicts with other States. I know the Corps of Engineers and the Forest Service and the BLM have some concerns about some of the designations, some of the mileage towards the end.

I also want to state for the record that we do need some clarifying language stating that the Army Corps of Engineers is responsible for managing Abiquiu. I think that is fairly clear, but nonetheless perhaps we may want to state that emphatically.

I recently met with the district engineer, Lieutenant Colonel Kent Gonser and will work to address the Corps' concern that the bill not interfere with the Corps' ability to operate Abiquiu for flood control, specifically in reference to the section of the river below 6,283.5 feet elevation that is not proposed for wild and scenic status.

Again, Mr. Chairman, I want to thank you in particular for your leadership on this issue. We hopefully will have at the end bipartisan support. Senator Domenici is a cosponsor, and certainly the issues he has raised I think we should examine. And as we move the bill through the Congress certainly I think we can reach an accommodation because I think it is worth it to pass this bill.

Once again, I want to thank you both for your leadership on these issues.

[The prepared statement of Mr. Richardson follows:]

STATEMENT OF THE HONORABLE BILL RICHARDSON on S. 850

Thank you, Mr. Chairman, for this opportunity to testify on S. 850 which would designate approximately 31 miles of the Rio Chama River in northern New Mexico as a wild and scenic river. I want to commend the two Senators from New Mexico for their work on this bill and look forward to continued work together towards the bills passage. The Rio Chama is in my district in New Mexico. I have introduced a companion bill, H.R. 1839, which was passed by the House on October 27, 1987. I probably do not need to repeat the superlatives used to describe the Rio Chama, for I am sure that anyone who has seen the Rio Chama agrees that it deserves to be designated as a wild and scenic river. I will note that this section of the Rio Chama includes a varied and scenic landscape of tall Ponderosa Pine forests, exciting rapids, high redrock cliffs and a beautiful wilderness canyon.

During the hearings on the Rio Chama in the House, the Subcommittee on National Parks and Public Lands learned of the widespread support for this bill among the people of New Mexico, including local landowners, conservation groups, and other citizens who appreciate the unique character of the Rio Chama. S. 850 is the result of a cooperative effort among these local groups. It is especially important to the local landowners who could lose access to their land and the ranchers whose pastures would be flooded if the present level of Abiquiu reservoir were raised.

A National Park Service study stated: "In terms of total recreation usability, [the Rio Chama] is the most important and valuable river in the state, being less than three hours driving time from 3/4 of the state's population." Federal wild and scenic designation will protect the bald eagle which winters on the river, preserve archaeological sites and protect ancient fossils. It will also increase tourism and boost small businesses in the area.

The Rio Chama is managed jointly by the U.S. Forest Service and the Bureau of Land Management. The Forest Service has recommended this section of the Rio Chama for wild and scenic status in the Santa Fe National Forest Plan. The BLM's Resource Management Plan also recommends wild and scenic status for the section of the river adjacent to BLM lands. The New Mexico Legislature designated this same 31 mile segment of the Rio Chama as the state's only "Scenic and Pastoral River" in 1977 and encouraged wild and scenic designation.

Although the Forest Service and the BLM have recently expressed some concern over designation of the river sections adjacent to private land, I can assure the Committee that these private landowners support the bill and also have no development plans that are inconsistent with wild and scenic designation. S. 850 not only protects the Rio Chama, but accomodates existing, authorized uses of the river. It preserves the recreation, wildlife, wilderness and grazing rights now existing between El Vado Dam and Abiquiu Reservoir.

The bill also expressly states that it does not prohibit the operation of Abiquiu Dam as currently authorized by law. I support the current uses of Abiquiu Dam and reservoir, including recreation, and want to emphasize that this bill does not diminish current uses such as motorboats or future lakeside development. The Army Corps of Engineers is responsible for managing Abiquiu. I have recently met with the District Engineer, Lt. Col. Kent Gonser, and will work to address the Corps' concern that the bill not interfere with the Corps' ability to operate Abiquiu for flood control, specifically in reference to the section of the river below 6,283.5 feet elevation that is not proposed for wild and scenic status.

Again, I want to thank the Subcommittee for the chance to state my wholehearted support for this bill to designate the Rio Chama as a wild and scenic river.

Senator BINGAMAN. Thank you very much for coming over to testify and, again, for all the help you have provided and leadership on the House side. We will excuse you and will include your entire statement in the record.

We have three witnesses today: Brigadier General Peter Offringa; Deputy Director for Civil Works for the Corps of Engineers; Mark Reimers, who is the Associate Deputy Chief of the Forest Service; and Mr. Robert Burford, Director of the Bureau of Land Management.

Why don't we just have all three of you come forward and take a chair and we will let you each testify and then we can ask questions. I do not think we need to make this a protracted hearing. I look forward to your testimony.

General, would you begin first.

STATEMENT OF BRIG. GEN. PETER J. OFFRINGA, DEPUTY DIRECTOR FOR CIVIL WORKS, U.S. ARMY CORPS OF ENGINEERS, ACCOMPANIED BY DICK KREINER, HEAD OF THE RESERVOIR REGULATION GROUP, ALBUQUERQUE DISTRICT; AND JIM WHITE, CHIEF, ENVIRONMENTAL SECTION, ALBUQUERQUE DISTRICT

General OFFRINGA. Yes, sir.

It is a pleasure for me to be here with you today. I have brought with me Mr. Dick Kreiner, who is head of the Reservoir Regulation Group of the Albuquerque District, and Mr. Jim White, who is Chief of the Environmental Section of the Albuquerque District.

It is a pleasure to be able to testify on S. 850, which deals with the proposed wild and scenic designation of the Rio Chama in New Mexico.

The Corps of Engineers recognizes the beauty of the Rio Chama between El Vado and Abiquiu Reservoir and agrees that portions of it are wild and unique. We would defer to the Departments of Agriculture and Interior on the merits of designating the 25-mile portion of the river between El Vado Ranch launch site and elevation 6,353 as a component of the National Wild and Scenic River System.

The Department of the Army has two major concerns with the bill. The first is with the specifics of Section 2, which provides for Bureau of Land Management and Forest Service management in a portion of the Rio Chama that is within the Abiquiu Reservoir and below the limits of the flood control pool—that is, below elevation 6,283.5.

Secondly, we are concerned about serious disadvantages to the public which would occur if the stretch of the river between elevation 6,283.5 and 6,353 is designated as a component of the Wild and Scenic Rivers System. I would like to address each of these two separately for a moment.

First, the portion of the Rio Chama between 6,235 and 6,283.5. As you know, this section lies within the portion of Abiquiu Reservoir which is dedicated via public land withdrawal, flood easements and fee ownership to storing water for flood control. Much of Abiquiu Reservoir above elevation 6,235 lies within private ownership.

At the time of construction, the Corps obtained a combination offee interest and flowage easements on privately owned reservoir lands from elevation 6,215 to elevation 6,293.5. However, the Forest Service and the Bureau of Land Management lands referred to in S. 850 lying in the Santa Fe National Forest were withdrawn for flood control from the U.S. Forest Service and the Bureau of Land Management up to elevation 6,353.

The conditions of these easements and withdrawals allow the Corps to temporarily store water on these lands. However, when not being used for flood storage these lands are managed by their respective owners and agencies, including the U.S. Forest Service. Any private lands in the area upon which flowage easements were acquired and which may have since been purchased by the Forest Service remain subject to these easements, since the easements are deed conditions.

Abiquiu Dam was generally authorized by Public Law 868, 80th Congress. The authorized project purposes are flood control, sediment retention and recreation. It is part of a system of reservoirs in the Rio Grande basin operated under a complex institutional arrangement in accordance with the provisions of the Rio Grande Compact and Public Law 86-645.

These provisions regulate to a large extent the timing and quantity of releases that can be made from Abiquiu Dam. Some variance is allowed with the advice and consent of the Rio Grande Compact Commission and approval by the District Engineer. Operation of the dam in accordance with P.L. 86-645 and in support of the Rio Grande Compact results in numerous disputes among downstream competing interests.

Because the reservoirs in the Middle of Rio Grande Basin are operated as a flood control system, there is some flexibility as to which reservoir is used to store particular flood waters. This flexiblity allows the Corps to optimize the effectiveness of the system.

Because of this flexibility, many interests frequently request that the District Engineer seek variances with the concurrence of the Commission. For example, farmers downstream want carryover water released to assist irrigation operations; the State of Texas does not want releases in the summer because of stream losses.

Landowners downstream do not want high releases during peak reservoir inflows because of streambank erosion problems and the possibility of flooding; recreation users of the Rio Chama want the flood control pool evacuated as quickly as possible to use the river for canoeing and rafting. These conflicts must be worked out by the Corps of Engineers within the limits of and in compliance with the Rio Grande compact P.L. 86-645.

However, conflicts in the use of the Rio Chama above Abiquiu Reservoir between elevations 6,235 and 6,283.5 were virtually nonexistent prior to 1985. Since 1985, a series of unusually wet years and the utilization of storage for the San Juan-Chama waters as authorized by P.L. 97-140 has caused reservoir operations to store water above elevation 6,235 three times.

The maximum length of time that the water was stored above that elevation was from 19 November 1986 to 20 March 1987, and we have prevented $120 million in flood damages downstream since 1985 by using that storage.

Although water has been stored above elevation 6,235 more frequently since 1985, the reach of the river between elevations 6,235 and 6,283.5 remains available for upstream recreational use most of the time.

It appears that Section 2 is unnecessary in that the activities discussed in that section can be carried out pursuant to existing authorities of the Federal agencies involved. We are concerned, however, that Section 2 may be used to hinder the Corps' ability to make timely flood control decisions and other decisions regarding the storage of water.

For example, a New Mexico Act, passed in 1977, which designated portions of the Rio Chama as a Scenic and Pastoral River is the basis of a pending lawsuit. The New Mexico statute specifically provided that nothing in the Act "shall be construed to be incompatible with regulation of river flow for flood control or beneficial uses of water."

Nevertheless, the lawsuit claims that Federal officials were operating Abiquiu, Elephant Butte, and Caballo Dams in violation of the New Mexico Act. Although the district court dismissed the lawsuit for lack of subject matter jurisdiction, an appeal was taken, and the case is now pending before the 10th Circuit of the United States Court of Appeals.

In order to keep conflicts to a minimum, it must be clear that decisions related to the operation of Abiquiu Reservoir are controlled by the Corps of Engineers. In decisionmaking the Corps has operated, and will continue to operate, the reservoir within existing laws and regulations in coordination with all interested parties, especially our sister Federal agencies.

Because we do not believe the present Section 2 of the bill is necessary yet has the potential for creating conflict, we recommend that it be deleted. In addition, we recommend a new Section 2 be added which would state: "Nothing in the Act affects, or interferes with, the Secretary of the Army's operation and management of Abiquiu Dam and Reservoir, as the Secretary of the Army determines appropriate, for purposes authorized by law as of the date of enactment of this Act."

The second area of Corps concern is that portion of the river between elevation 6,283.5 and 6,353, which is not required for frequent flood storage at the present time. This area would be subject to flooding at intervals greater than once every hundred years. However, designation of this section of the river as wild and scenic would impact alternative potential uses of the reservoir. The bill should be amended to protect current and future uses of the reservoir in support of water supply, recreation and flood control. I would like to address each of these concerns in a little more detail.

First, with respect to water supply, Section 5 of P.L. 97-140 authorized the Corps of Engineers to provide 200,000 acre-feet of storage in the Abiquiu project for entities which have contracted with the Secretary of Interior for San Juan-Chama project waters. At the time of initial dam construction, real estate flowage easements were only acquired to elevation 6,293.5. This is the elevation of authorized flood control and sediment storage plus ten vertical feet for wave action and other effects.

Therefore, in order to accommodate the 200,000 acre-feet, the water is currently being stored in the lower portion of the flood pool, with the stipulation that these waters are subject to evacuation from the reservoir if the flood control space is needed.

In the future, however, the City of Albuquerque and other San Jaun-Chama water recipients may wish to allow the water to be retained in a permanent pool rather than lose the water because it had to be evacuated for flood control use. In order to make a permanent pool with storage equivalent to 200,000 acre-feet, additional real estate interests would be required.

Second, studies have recently been completed on reallocation of a portion of the reservoir for water supply. The studies concluded that while storage for water supply additional to the presently authorized 200,000 acre-feet was technically feasible, no local entities were currently willing to pay the costs associated with additional conservation storage at this time. It is conceivable that at some time in future dry years some entity would need to use Abiquiu Reservoir for water supply.

Our third point is that Abiquiu Reservoir contains no permanent pool for recreation. However, the 200,000 acre-feet and water stored in the sediment pool currently provide substantial opportunity for slackwater-based recreation. This recreation generates about $3.4 million in benefits and local revenue yearly.

The City of Albuquerque currently estimates that they will start using their San Juan-Chama water in 30 years. This water will be released downstream to compensate for overdraft of the ground water which provides the city with its water supply. At that point, storage needed by the city in Abiquiu Reservoir would begin to diminish.

In addition, the sediment pool would be almost completely filled at that time, so there would be no permanent water in the lake. Local interests have recently recognized this and have expressed interest in establishing a permanent recreation pool at Abiquiu Reservoir.

Establishment of a permanent pool for any of the above future uses without loss of flood control capacity would be precluded by the proposed legislation. We are aware that there are tradeoffs involved in any decision.

Senator BINGAMAN. Excuse me, General. Senator Domenici wanted to ask a question.

Senator DOMENICI. Backing up to the end of the previous sentence, where you spoke of a permanent recreation pool, where could that water come from? It would have to be acquired, would it not?

General OFFRINGA. Yes, sir, it would.

Senator DOMENICI. So if we are interested in protecting for that, everybody would have to understand, under the eventualities that you describe as Albuquerque uses up its water that to assure a permanent pool that you would not be forced to release some additional water would have to be acquired?

General OFFRINGA. That is correct, sir.

Senator DOMENICI. Thank you, Mr. Chairman.

Senator BINGAMAN. Go ahead, please.

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General OFFRINGA. Congress should be aware that this bill precludes as a practical matter any of the opportunities previously mentioned, including the possibility of future Federal revenue from recreation or water supply use of the dam.

The Congress should also be aware that, in event of a design flood, Abiquiu Dam is not designed to release water quickly enough to keep flood water from backing up and inundating the reach between 6,283.5 and 6,353. The dam was designed this way so that, in event of a large, although low-frequency flood, the dam would hold the water back, preventing dangerous overtopping of the structure as well as preventing flooding downstream. Therefore, for extremely rare but large floods some portion of the reach between 6,283.5 and 6,353 may unavoidably flood even if designated as a wild and scenic river.

Normally, overtopping of dams under conditions of extremely large floods is prevented by excavating an emergency passage, or spillway, which drains water downstream well before the water level reaches the top of the dam. In the case of Abiquiu Dam and Reservoir, the areas available to put a spillway consisted of mostly rock material which was difficult and expensive to excavate. However, the dam is located in an extremely narrow canyon so that the increase in construction cost per foot of increased dam height is very reasonable. Accordingly, project cost savings were realized by limiting spillway excavation to elevation 6,350 and raising the top of the dam to a height that would protect against catastrophic overtopping even with an unusually large flood.

In summary, therefore, we believe the Corps of Engineers should continue to operate and administer the flood control pool as it has since Abiquiu Reservoir was completed. The present Section 2 should be deleted and a new Section 2 added which states: "Nothing in the Act affects or interferes with the Secretary of the Army's operation and management of Abiquiu Dam and Reservoir, as the Secretary of the Army determines appropriate, for purposes authorized by law as of the date of enactment of this Act."

In addition, we recommend that Congress modify the bill to protect future and existing water storage between elevations 6,353 and 6,283.5. If not so modified, the Administration would oppose the bill.

Once again, thank you for the opportunity to testify on this proposed legislation.

Senator BINGAMAN. Thank you. Let me ask a question or two, if I could.

I was under the impression that Congress had authorized storage at Abiquiu which resulted in water going up to the elevation of 6,283. Is that wrong?

General OFFRINGA. Sir, that is correct, but we now also have an authorization for the 200,000 acre-feet of water to be stored for the City of Albuquerque.

Senator BINGAMAN. In addition, you have a certain amount of authorization for flood.

General OFFRINGA. That is correct. And with the remaining sediment space that would carry us back to 6,283.5, if we had approximately the hundred-year flood.

Senator BINGAMAN. So the two of them together gets you to 6,283—I mean, if everything is used which you are presently authorized to do?

General OFFRINGA. If we had the hundred-year flood, we would inundate back to 6,283.5 without releasing the 200,000 acre-feet.

Senator BINGAMAN. Is that agreed to by everybody? Mr. Burford, you were shaking your head. Do you disagree with that?

Mr. BURFORD. That is not my understanding.

Senator BINGAMAN. Maybe you could specify your understanding.

Mr. BURFORD. I took mine from the map. It is not in the Forest Service testimony, so I do not have it in front of me. So I will ask Mark to give you his understanding.

Mr. REIMERS. It is our understanding that the existing flood storage authorization is to this point here, 6,283.5. This additional part would be the one that would be affected by a very large, over hundred-year frequency—this part right here from 6,353 to 6,283.5.

Mr. BURFORD. That is not what I heard them saying.

Senator BINGAMAN. General, did you get that distinction between what they are now representing and what you had said? They are saying that the hundred-year flood would require, as I understand it, you to go from 6,283 to 6,353.

General OFFRINGA. No, that is not correct. The hundred-year flood would fill us to 6,283.5 without releasing the 200,000 acre-feet stored for the City of Albuquerque.

If you have the extremely rare design flood occur-one which is the maximum precipitation that could possibly ever fall in that watershed-you would go all the way up to 6,353, and that is because the outlet gates just cannot let the water out fast enough. So there is a possibility of inundation all the way back to 6,353 if we had that flood for which the height of this dam is designed.

Senator BINGAMAN. I guess my concern and what I am leading up to is I had thought that Congress had authorized you to go to 6,283 and I guess what your testimony seems to say to me is we have designed this dam so that if a big flood comes we will go to 6,253. We are going to flood this area of the Rio Chama if the big flood comes, because that is the way we have designed the dam.

Is that what you said?

General OFFRINGA. That is correct, because of the dam safety aspects of the design.

Senator BINGAMAN. I guess my concern there is that I did not think Congress had authorized you to do that, based on the previous testimony, and I am just recalling what I heard in July when we had the hearing.

I did not think you had been authorized by Congress to store water in that reservoir under any circumstances in excess of 6,283.

General OFFRINGA. It comes down to safety criteria as compared to storage. We do not operate to store water in the reservoir beyond 6,283.5 for the hundred-year flood.

Senator BINGAMAN. But you have designed the reservoir so that if a large flood comes you have no alternative but to flood the Rio Chama—I mean, the additional four or five miles? Is that what you are saying?

General OFFRINGA. If we have that highly rare and statistically improbable event, that is correct.

Mr. KREINER. The original site conditions were such that it was cheaper to build the dam higher than to excavate a spillway in rock material low or deep enough to pass the probable maximum flood without overtopping and threatening the dam. This resulted incidentally in the additional storage over and above elevation 6,283.5. So the design flood storage was 6,283.5 (the top of the flood control pool), but for dam safety considerations the spillway design flood or the probable maximum flood still required that the dam be high enough to prevent overtopping of the structure. Again, it was cheaper to build the dam high than to excavate a larger spillway, which we would normally have on a flood control project.

Mr. BURFORD. I think I understand where he and I were interpreting it differently. That portion in there is to be held for only temporary storage until a spillway can let it out at a gradual rate instead of having a large enough spillway to take it off and keep it at the lower level without any storage. Am I right on that?

General OFFRINGA. That is correct.

Senator BINGAMAN. I guess my concern is this. I had thought that the issue of how much water could be put there or at what elevation the water could be backed up to had been fairly well settled by Congress and that the top was 6,283.

And now I am being informed that maybe that is what Congress said, but you have designed a dam which will take it to 6,353 if the flooding occurs which requires that. I guess what I am wondering about is, given the existing design of that dam, are we arguing about something here that you folks have already precluded us from protecting?

Mr. Kreiner. I think, Senator, there is a little bit of confusion. There are two different design considerations for the dam. There is a design for normal expected floods, and that is for the project to reach an elevation of 6,283.5. Then the project is also designed so that if you get the probable maximum flood, which is based on criteria that the National Weather Service provides on the probable maximum precipitation, the project is not overtopped and fails.

This is the additional space over and above the top of the flood control pool plus the more recently authorized 200,000 acre-feet.

Senator BINGAMAN. I still do not think that that answers my concern. Maybe I am going down a blind alley here or dead end, but it does seem to me that you are telling us that we have got a bill which contemplates making wild and scenic river of an area that you may have to flood and may not be able to keep from flooding because of the way you designed the dam.

You designed the dam so that this area will be flooded when that maximum flood occurs. Is that what you are telling me? This is the first time I have heard that.

General OFFRINGA. That would occur. But I do not think that we are beyond what we were authorized to do.

The design and construction of reservoir embankments such as Abiquiu Dam are subject, in a somewhat simplified sense, to two sets of criteria. The normal operations criteria adhere very closely to the specifics of Congressional authorization. These criteria em-

phasize the authorized storage amounts as well as rates of precipitation and streamflow which are reasonably predictable.

The second set of criteria are based on the prevention of catastrophic structural failure. These criteria address extremely rare, but still possible, large hydrologic events. This second set of criteria result, for example, in preventing the overtopping of the embankment under conditions of even the most remotely possible large floods.

Normally, design would have included an overflow emergency spillway section with a crest elevation at the top of the authorized flood control pool. The top of the dam would have been at a higher elevation to prevent any possibility of ever overtopping the dam. That part of an unusually large and rare flood in excess of the operations and authorization criteria, if such an event did occur, would then be automatically released through the emergency spillway. During this rare flood event, the maximum storage would temporarily exceed the authorized flood control pool. Overtopping of the dam, again, would be prevented and the risk of catastrophic dam failure would be essentially eliminated.

During design, the site of Abiquiu Dam was discovered to be special and unique in terms of providing for dam safety under conditions of the large, rare floods. The practicable spillway locations consisted substantially of resistant rock material which would have been extremely difficult and expensive to excavate. The dam was located in an extremely efficient, narrow canyon section where the dollar cost per vertical foot of elevation was very reasonable. It was much less expensive to excavate only a modest spillway and increase the height or elevation of the dam crest than to excavate a deeper, wider spillway into the rock material. The resultant spillway crest elevation was then 6,350 feet msl.

I do not have the authorization in front of me, but it is my understanding that the project as well as the substitute plan which generated that particular design was approved by both the Senate and House committees during the 1955 hearings.

The 1957 Public Works Appropriation specifically provided $1,500,000 for ". . .Chamita Reservoir (Abiquiu). . . ." The record of the testimony for that appropriations bill references the Corps of Engineers Letter Report to the Public Works Committees of both the House and Senate via which the Corps Abiquiu Dam as one major component of a superior substitute plan for the Chamita Reservoir project originally authorized. Such project details as the spillway crest elevation of 6,350 and the storage capacity of approximately 1.2 million acre-feet were presented in that letter report.

Senator BINGAMAN. We can go back to the testimony we had in July, but my distinct recollection was that everybody was sort of working on the assumption that if there was ever going to be water backed up to 6,253 it could only occur after the Corps had come back to Congress and gotten increased authority and increased authorization which would permit it to do that, and that that authority does not exist in law now and the authorization does not exist in law now and the water level would not go to that level now.

But you are telling me it may not exist in law, but the water level is going there because that is the way you have designed the dam.

General OFFRINGA. I think again we are into the question of how we addressed an authorization for storage versus the basic requirement for dam safety. The water would back up to 6,353 when we are operating the dam for flood control only under very unusual circumstances where dam safety is as major a concern as precluding downstream damages. We cannot and would not operate to hold water beyond our existing authorization.

Senator BINGAMAN. I understand that is not the permanent pool. The permanent pool is 6,222, is it not?

General OFFRINGA. That is normally where we hold the water.

Senator BINGAMAN. I thought that was the permanent pool. 6,235?

Senator DOMENICI. Mr. Chairman, may I ask?

Senator BINGAMAN. Go ahead.

Senator DOMENICI. General, I do not relish disagreeing with a General, but I think you are wrong on a completely separate issue, so I would like to try to break it into two. I think we can go back and check the record and on the extraordinary flood, where you are telling us in order to do your job, which is to prevent flooding, this flood water may indeed back way up into what we are talking about as wild or scenic.

That is that extraordinary situation where you were saying you could not do anything about it. That is what Senator Bingaman has been asking about.

If the flood came, and you could not spill it any quicker, it would be there. That is what you are telling us.

But let me talk about the current authorized uses, not about this extraordinary one. Can we do that for a minute?

General OFFRINGA. Yes, sir.

Senator DOMENICI. Now as I understand the situation before the addition of the Albuquerque water, which was added in P.L. 97-140, it was contemplated that there be storage here of 500,000 acre-feet and 50,000 for sedimentation, for a total of 550,000. Am I correct on that?

General OFFRINGA. That is correct, sir.

Senator DOMENICI. Then we came along and in that Act, the one I just alluded to, we added the 200,000 acre-feet of water for Albuquerque. And we said "the agreements to thus store San Juan-Chama project water shall not interfere with the authorized purposes of the Abiquiu Dam and Reservoir project and shall include a requirement that each user of storage shall pay any increase in operation and maintenance costs attributable to storage of that user's water."

Now when I add those two together I get about 750,000 acre-feet. You would have 502,000 that you had to capture for flood purposes and Albuquerque has 200,000, and there is a little over 50,000 for sedimentation.

Now that is the issue. If that all occurred, and we had a wild and scenic river designation and you had to dump quickly, I am concerned because at that point the elevation of that pool that I just described would be 6,307 feet.

That is higher upstream than the 1.7 miles that we have now protected as managed as a wild and scenic river, subject to all of your prerogatives I have described.

It is an additional one-plus miles upstream. Those figures are supported in testimony from Steve Reynolds, the water engineer for New Mexico, who says "the currently authorized purposes of Abiquiu Reservoir include 555,000 for sediment and flood control, 200,000 of storage of San Juan-Chama, for a total of 755,000."

I have been using 750,000. I intend it to be accurate wherever I have stated it. Abiquiu Reservoir is capable of storing that amount of water at an elevation of 6,307 feet. That elevation is about 1 mile or so upstream of the elevation of 6,283.5, where the wild and scenic river begins in section 1 of the bill.

While I have other concerns, that one is, in my opinion, a serious one. It appears to me that we could have inconsistent declared uses. It would seem to me that you could have to dump Albuquerque's water under circumstances of a large flood. We have to get that one cleared up.

Would you agree that that is an important issue and that we ought to get it determined, General?

General OFFRINGA. Yes, sir. There is no question this must be resolved.

Senator DOMENICI. Now in the event—let us just assume for now, because I do not want Senator Bingaman to have to call another hearing—let us assume that the numbers I have just given you and the elevations I have just stated are correct and that the wild and scenic river ends, as now described in S. 850, a mile and a quarter downstream into a reservoir of 755,000 were feet.

Would you not have to maximize the dumping of Albuquerque's water in order to avoid violating the wild and scenic river designation?

General OFFRINGA. We would. Yes, sir.

Senator DOMENICI. That is assuming the wild and scenic designation gave you no other discretion.

General OFFRINGA. That is correct, sir.

Senator DOMENICI. And if you had to move it out as fast as possible, faster than you would otherwise do it but for this designation, is Albuquerque correct and is Steve Reynolds correct in saying you would move Albuquerque's water downstream more rapidly than they requested?

General OFFRINGA. Yes, sir.

Senator DOMENICI. Now let me move to that other issue that Senator Bingaman raised. Are you saying to us that because of the way the reservoir is built, that it has the potential, prospect—whatever you want to call it—to hold more than a hundred-year flood?

General OFFRINGA. That is correct, sir.

Senator DOMENICI. What is it?

General OFFRINGA. Greater in magnitude than a 1,600-year flood.

Senator DOMENICI. So a 2,000-year flood, you are saying if that occurred, it would back up not only that 1.4 miles that we are talking about but would back up substantially further into the wild and scenic designation?

General OFFRINGA. That is correct, sir.

Senator DOMENICI. And the distance that you have given us is consistent with the capacity of the reservoir; is that not right?

General OFFRINGA. That is correct, sir. If you refer to the chart, if the water goes all the way to the top of the spillway then we would have water backed up to elevation 6,353. This elevation would only be reached, however, by an extremely rare event with a frequency on the order of once every 10,000 years.

Senator DOMENICI. Is that then 1.2 million acre-feet? Is that the capacity of this reservoir?

General OFFRINGA. That is correct, sir.

Senator DOMENICI. So that is the extraordinary, 10,000-year flood that you have been describing to the Chairman?

General OFFRINGA. That is correct, sir.

Senator DOMENICI. Thank you very much. Thank you, Mr. Chairman.

Senator BINGAMAN. Let me ask if you folks build everything for the 10,000-year flood? I mean, that is a fairly expensive view of what is required with our limited tax dollars, to build all reservoirs so that you will be able to handle the 10,000-year flood.

General OFFRINGA. No, sir, we do not design for the 10,000 year flood for purposes of controlled, normal operation. However, we and other water resource agencies do design our projects against catastrophic structural failure in the remote event of such occurrences.

Senator BINGAMAN. Why did you build this one to handle the 10,000-year flood?

General OFFRINGA. This was only because construction of the higher dam, in order to preclude a catastrophic overtopping in the event that we had that improbable, level of flooding, was so much less expensive than making a larger excavation for the emergency spillway.

Senator BINGAMAN. I think we are probably going to have to explore some of the issues that were raised here in the future with some other witnesses.

Let me go ahead and hear from Mr. Reimers, who is the Associate Deputy Chief for the Forest Service.

STATEMENT OF MARK A. REIMERS, ASSOCIATE DEPUTY CHIEF, FOREST SERVICE, DEPARTMENT OF AGRICULTURE

Mr. REIMERS. Thank you, Mr. Chairman and Senator. We did prepare two displays for the convenience of the Committee. The one that we have been looking at depicts the area and another one that deals with the actual map and shows the various segments of the river. I can highlight that map; however, you are familiar with it, and I do not need to do that. Whatever you please.

Senator BINGAMAN. State that again?

Mr. REIMERS. Do you want me to go over the map, or are you comfortable?

Senator BINGAMAN. I think we are reasonably comfortable with what is there. I do not think you need to walk over to it. I think you can just summarize your testimony—whatever you would like.

Mr. REIMERS. Fine. I will do that.

Just very briefly, of course the Rio Chama was listed as a potential river in the inventory in 1982. The Forest Service, as a part of the Santa Fe National Forest Land Management Plan, did look at the entire segment of the river under consideration and came to a tentative recommendation for designation of the 31 miles.

In our testimony we defer to the Department of the Interior on the upper segment, which is within their jurisdiction. We recommend a wild river designation from the National Forest boundary down to the monastery. The Administration recommends that the segment that involves the monastery not be designated.

And then we recommend the lower segment, from the monastery down to this area of question over the various levels of Abiquiu Dam, as a recreational river rather than a scenic river, feeling that that designation is more compatible with the definition in the Act.

In either case, of course, it would be wild and scenic. There is a road that parallels the river on the lower segment and it is visible in places, as I understand it, from the river. That is why we are recommending it as a recreational segment.

Then, finally, with regard to Section 2 of the bill, which deals with the question that the Senator was raising and refers to our land management plan and river management plan. We do not believe that Section 2 is necessary in the statute. We do intend to manage that area under the forest plan for recreational values.

If it is not included in the legislation, we would on a periodic basis, as a part of the revision of the National Forest plan, look at the management there. We would have to interact with the Corps with regard to their responsibilities and the easements that they have.

That summarizes my statement.

[The prepared statement of Mr. Reimers follows:]

STATEMENT OF
MARK A. REIMERS, ASSOCIATE DEPUTY CHIEF
FOREST SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

Before the
Subcommittee on Public Lands, National Parks and Forests
Committee on Energy and Natural Resources
United States Senate

Concerning S. 850, Rio Chama River

December 17, 1987

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

Thank you for the opportunity to appear before this subcommittee to offer the Department of Agriculture's views on S. 850, a bill "To amend the Wild and Scenic Rivers Act to designate a segment of the Rio Chama River in New Mexico as a component of the National Wild and Scenic Rivers System."

The Department of Agriculture recommends enactment of the bill if amended as we suggest. We defer to the Department of the Interior regarding those portions of the bill affecting lands administered by the Bureau of Land Management. We defer to the U.S. Army Corps of Engineers regarding those portions of the bill affecting lands withdrawn for the Abiquiu Reservoir.

Section 1 of S. 850 would designate 30.75 miles of the Rio Chama River, generally between El Vado Dam and Abiquiu Reservoir as a component of the National Wild and Scenic Rivers System.

Section 2 would direct the Secretary of the Interior, acting through the Bureau of Land Management, and the Secretary of Agriculture, acting through the Forest Service, to manage the segment of the Rio Chama River from elevation

6,283.5 feet above mean sea level downstream to elevation 6,235 feet above mean sea level. This segment is within the authorized flood control reservoir for Abiquiu Dam. This segment would be managed together with the adjacent Forest Service lands not included in the Chama River Canyon Wilderness.

The Rio Chama River is identified as a potential Wild and Scenic River in the National Rivers Inventory published by the National Park Service in 1982. It has been designated as a "Scenic and Pastoral" river by the State of New Mexico. The river flows through rugged shale and sandstone cliffs, cutting a canyon to a depth of over 1,500 feet. It is one of the best streams in the State for rainbow and brown trout fishing. To rafters, kayackers, and canoeists it offers white water rapids that are exciting, yet gentle enough for beginners or family-type rafting trips. Hiking, camping, and hunting are also popular along the river. Recreation use during 1986 totaled nearly 30,000 visitor-days.

The Santa Fe National Forest Plan recommends inclusion of 31 miles of the Rio Chama River in the National Wild and Scenic Rivers System. This recommendation is the result of several years of study conducted by the Forest Service in cooperation with the Bureau of Land Management, other Federal agencies, and the State of New Mexico. This process included extensive public review as required by the Wild and Scenic Rivers Act.

The Forest Plan recommends that the 21.5-mile segment of the river beginning at the El Vado launch site downstream to the Chama River Canyon Wilderness boundary -- at the northern property line of the Monastery of Christ in the Desert -- be administered as a wild river. The Forest Plan also recommends

that the 9.5-mile segment downstream from the monastery boundary line to elevation 6,283.5 be administered as a recreational river.

The following recommendations apply only to the 21 miles of the river within the National Forest boundary. As stated earlier, we defer to the Department of the Interior regarding those portions of the bill affecting lands administered by the Bureau of Land Management.

We recommend that the 11.5-mile segment from the National Forest boundary downstream to the northern property line of the monastery be classified as a wild river.

We recommend that the segment of the river between the northern and southern monastery property lines not be designated. This would assure that the Federal government would not be forced to acquire this property some time in the future.

We recommend that the segment of the river from the southern monastery property line downstream to elevation 6,353 be classified as a recreational river. S. 850 would classify this segment as a scenic river. A recreational classification would be more in line with the definitions of the classifications in the Wild and Scenic Rivers Act. This segment is paralleled in part by two different roads. A scenic classification might limit the development of campground facilities as contemplated in the Forest Plan to meet public needs.

On October 1, before the House Interior Subcommittee on National Parks and Public Lands concerning an identical bill, H.R. 1839, we indicated that the

Corps of Engineers had concerns regarding designation of the Rio Chama between the elevations of 6,353 feet and 6,283.5 feet (approximately 4 miles). Designation of this segment would foreclose the option to raise the pool level to 6,353 feet. As a result of these concerns, we defer to the U.S. Army Corps of Engineers regarding this segment.

We recommend that S. 850 be amended to reflect these recommendations. We also recommend other amendments to clarify administrative responsibilities and to remove unnecessary language. These recommendations are presented, with supporting rationale, in our supplemental statement. I request that the supplemental statement be included in the hearing record along with my testimony.

This concludes my testimony. I would be pleased to answer any questions you may have.

SUPPLEMENTAL STATEMENT
UNITED STATES DEPARTMENT OF AGRICULTURE
CONCERNING S. 850, RIO CHAMA RIVER

SECTION 1(a):

Clarify the sentence on page 1, lines 7 through 9, and page 2, lines 1 through 3. This statement is ambiguous, and it appears that it would authorize joint administrative responsibility over the proposed Rio Chama Wild and Scenic River to both the Secretary of Agriculture and the Secretary of the Interior. Add the following to the sentence:

> "in accordance with their jurisdictional responsibilities and any interagency agreements as to the management of the segment that may be entered into by the Secretaries."

Delete the sentence on page 2, lines 3 through 8. Adequate authority to develop, revise, and amend a "Cooperative Management Plan" is already contained in Section 10 of the Wild and Scenic Rivers Act and in general statutory authority granted the Secretary of Agriculture and the Secretary of the Interior.

Delete the sentence on page 2, lines 13 through 17. This philosophy is already stated in Section 10(b) of the Wild and Scenic Rivers Act.

SECTION 2:

Delete lines 1 through 17. S. 850 would not amend the Wild and Scenic Rivers Act to designate this segment of the Rio Chama River as a component of the National Wild and Scenic Rivers System. Adequate authority for management of this segment is contained in the 1897 Organic Act, the Multiple-Use Sustained-Yield Act of 1960, and the Federal Land Policy and Management Act of 1976. No additional authorities are necessary.

Delete lines 18 through 20, and insert the following at the end of Section 1:

> (c) ABIQUIU DAM. -- Nothing in this Act shall be construed to prohibit operation of Abiquiu Dam for purposes authorized by law as of the date of enactment of this Act.

Senator BINGAMAN. Thank you very much. I really do not have any questions of you at this point.

Do you have any?

Senator DOMENICI. I have none.

Senator BINGAMAN. Why don't we go ahead with Mr. Burford's testimony?

STATEMENT OF ROBERT F. BURFORD, DIRECTOR, BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR

Mr. BURFORD. In essence this is going to be a love-in between the Forest Service and the Bureau of Land Management because I am going to state that we do favor designation of that part of it which is under the administration of the United States Department of the Interior. We have cooperated with the Forest Service on two studies that have been done on that.

In my testimony we make some predictions as to what will happen and the number of recreation days under certain scenarios, whether it is designated or not designated. We do agree with the Forest Service that the bottom section there be managed as a recreational river, both because under the law it does not qualify as wild and scenic because of the closeness of that road, and also because it does intrude on Corps of Engineers possible flooded land.

We think it should be managed as recreation. There is actually very little difference in that management.

The monastery section is in the Forest. We concur with them that the monastery should probably be left out because of the very high values which will have to be bought out at some time in the future or, if not bought out, having had some experience with Congress, I think they would probably request that I exchange those lands.

Now, an exchange is sometimes a possibility, but a solution which takes a lot of time. We think that it would not interfere with the use of the monastery or the use of the river if that section was just deleted. We have been working with the private landowner down there, and that shows up on that other map, to acquire a section of land right there. I think the land falls within the boundaries of the Forest Service, either within or just without.

We are trying to make an exchange for that piece of land, which allows greater access to the river for recreational boaters and fishermen.

In summary, I would like to add to what Senator Domenici has said, and I would like to make certain that the comments of Governor Carruthers and Tom Bahr are included in the testimony because they have both contacted me with the same concerns as they have contacted the Senator with, and asked that I express their concerns to the Committee since they would not be present.

Thank you.

[The prepared statement of Mr. Burford follows:]

DEC 17 [illegible]

STATEMENT OF ROBERT F. BURFORD, DIRECTOR, BUREAU OF LAND MANAGEMENT, UNITED STATES DEPARTMENT OF THE INTERIOR, BEFORE THE SUBCOMMITTEE ON PUBLIC LANDS, NATIONAL PARKS AND FORESTS, COMMITTEE ON ENERGY AND NATURAL RESOURCES, UNITED STATES SENATE, ON S. 850, A BILL TO AMEND THE WILD AND SCENIC RIVERS ACT TO DESIGNATE A SEGMENT OF THE RIO CHAMA RIVER IN NEW MEXICO AS A COMPONENT OF THE NATIONAL WILD AND SCENIC RIVERS SYSTEM.

I appreciate the opportunity to appear here today to discuss the views of the Department of the Interior on S. 850.

We support enactment of those provisions S. 850 that relate to land administered by BLM. We defer to the Forest Service as to the remainder of the river segment that would be designated under S. 850. We also suggest that the bill be amended as the Forest Service, Department of Agriculture, recommends.

S. 850 would designate a 30.75 mile segment of the Rio Chama in north-central New Mexico as a component of the National Wild and Scenic Rivers System. Affected would be the segment of the river to be administered by the Secretaries of Agriculture and the Interior running downstream from the El Vado Dam to 6,283.5 feet above mean sea level. The segment from the El Vado Ranch launch site downstream to the beginning of Forest Service Road 151 would be administered as a wild river, and the remaining segment downstream would be administered as a scenic river.

Section 2 of the bill would require the two Secretaries, acting through the Forest Service and the Bureau of Land Management (BLM) respectively, to manage the segment of the Rio Chama from elevation 6,283.5 feet above mean sea level downstream to 6,235 feet above mean sea level, together with adjacent Forest

Service lands that are not part of the Chama River Canyon Wilderness. This management would be pursuant to the January 1986, Preferred Alternative for the proposed Santa Fe National Forest Plan, and the May 1986, "Interim Rio Chama River Management Plan," or as revised in the "Final Rio Chama River Management Plan." Finally, the bill would provide that nothing in this section shall be construed to prohibit operation of the Abiquiu Dam for purposes authorized by law.

In September, 1987, the Bureau of Land Management completed the Resource Management Plan for the public lands surrounding the Rio Chama, and it is now in effect, having been open to public comments for 30 days. Designating that portion of the river as a wild and scenic river would be consistent with that plan.

The BLM has been involved in management of the Rio Chama since 1980. Some of our early activities included designation of commercial and private visitor days, assessment of the environmental impacts from camping, and studies of the effects on fisheries of discharges from El Vado Dam.

In 1984, our management efforts intensified under a revised Memorandum of Understanding (MOU) with the Santa Fe National Forest. This MOU divided the wild and scenic river area proposed in S. 850 into two administrative areas. The portion managed by the BLM is the 21.5 mile section above the Christ in the Desert Monastery at the end of Forest Service Road 151. This area, which would become a wild river upon enactment of the bill, contains a section of the river bordered by designated Forest Service Wilderness and a BLM Wilderness Study Area.

The MOU provides for management of the section below the Monastery by the Forest Service. This 9.5 mile section, which S. 850 would designate a scenic river, is accessible by road and has been subject to intensive recreational use by both boating and land-based users.

The 1984 MOU required an Interim River Management Plan to be developed by both agencies to address management needs on the river. This Interim Plan has been guiding our joint management efforts since 1986. Boating on the BLM section of the Rio Chama, the segment that would be designated as a wild river, has increased from 1,300 visitor days in 1980 to 3,000 visitor days in 1986. Peak weekend use (for example, Memorial Day weekends) now exceeds 200 people launching each day. We believe that this approaches maximum capacity for quality camping on the proposed wild section to be managed by BLM.

On Labor Day weekend, 1987, over 200 people launched rafts, kayaks, and canoes at the El Vado put-in point. There were whitewater enthusiasts from Arizona, Utah, Colorado, and New Mexico. In addition to the water related thrills and scenery, the overnight camping in the wild section attracts people to the Rio Chama. This is the only such whitewater camping opportunity in New Mexico.

Most of the significant increase in use appears to be among private users. Commercial use is expected to remain level until predictable flows during tourist season can be assured through regular and predictable releases from the dam. The scheduling of such releases depends on cooperation among the

water right holders and managing agencies, and on the availability of downstream storage or water demand. If and when regular releases occur, BLM anticipates an increase in recreational use to 5,000 visitor days the first year and to 10,000 visitor days by the third year.

The Resource Management Plan that I mentioned earlier assures protection of the river corridor as a Special Management Area. Our Plan also recommends designation of the public land from a point approximately 3 miles downstream from the El Vado Ranch put-in to the Forest Service boundary as a wild and scenic river area.

We concur in the recommendations of the Forest Service that the 9.5 miles of river from the southern boundary of the monastery to elevation 6,283.5 be designated as a recreation river rather than a scenic river, that section 2, lines 1 through 17 of S. 850 be deleted and that section 1(a) be amended to clarify areas of jurisdiction between the Bureau of Land Management and Forest Service.

The Bureau of Land Management in New Mexico has worked closely with the Forest Service, Bureau of Reclamation, Fish and Wildlife Service, Army Corps of Engineers, New Mexico's Department of Natural Resources and Game and Fish, the New Mexico State Engineer, the City of Albuquerque Water Resources Department, and the Middle Rio Grande Conservancy District in managing the Rio Chama.

The Rio Chama is one of the most valuable water-based recreational areas on public lands in New Mexico. It is an important attraction for tourists and, thus, an important source of revenue for northern New Mexico communities.

This concludes my prepared statement. I will be pleased to answer questions.

Senator BINGAMAN. Thank you very much.

Let me just clarify now. Am I correct to understand that the Forest Service position is that you support the 31 miles being designated wild and scenic, with the exception of that recreational area where the monastery is? Is that what you testified?

Mr. REIMERS. The Administration position leaves open this question with regard to the Corps on the lower four miles, but we recommend the designation, with the exception of a segment through the monastery.

Senator BINGAMAN. That leaves it open. So you do not want it designated. I know you do not want the monastery part designated. Do you also not want the bottom four miles designated? You do not favor the designation of the 31 miles?

Mr. REIMERS. No. The forest plan indicated support for the entire segment that is in the bill, but as the Administration looked at that we could not come down on this Corps of Engineers question, so in terms of the statement that is before you on that lower segment the final Administration position is a deferral to the Corps of Engineers with regard to that lower 4.5 miles.

Senator BINGAMAN. And that is the BLM position, too?

Mr. BURFORD. Well, I will not take that position. I was not in on the negotiations because that is Forest Service land and we generally support the Forest Service plans when they come out. Whether I would have argued otherwise had it been BLM land, I am not prepared to say because I have not studied the issue.

I do support the Forest Service position.

Senator BINGAMAN. Did you have some questions?

Senator DOMENICI. You mentioned Secretary Bahr. We know his position. I believe we have it in writing. You said both Secretary Bahr and Governor Carruthers have conferred with you or talked with you.

Mr. BURFORD. I had called. Secretary Bahr called me specifically on this issue and conveyed the Governor's position to me, and the testimony I saw from Secretary Bahr was fairly strong testimony. He asked if I would mention the fact that the Governor does not support it. I called the Governor yesterday on another matter, and he said do not forget to mention my opposition to this wild and scenic unless the changes that we have suggested are made.

That is second-hand testimony, Senator. I know you have heard from the Governor the same as I have.

Senator DOMENICI. Well, frankly I called to confirm it, having read Secretary Bahr's statement. The Governor indicated to me that that was his feeling, too, that the entire lower portion of four miles, plus the 1.7 miles, should not be designated as wild and scenic. Is that what you are talking about?

Mr. BURFORD. That is what he said.

Senator DOMENICI. Thank you, Mr. Chairman.

Senator BINGAMAN. I think we have got all the statements in the record. I appreciate everyone testifying. The purpose of this hearing, was to receive testiminy from the three Federal agencies that were involved here.

We appreciate you all coming very much.

Senator DOMENICI. I have some written questions. Can I submit them and you can answer them? We are not going to be on this until next year, I assume.

Senator BINGAMAN. I am sure we will not do anything on it until at least next year. Thank you.

[Whereupon, at 2:57 p.m., the hearing adjourned.]

[Subsequent to the hearing the subcommittee received the following:]

SENATOR PETE V. DOMENICI

QUESTIONS SUBMITTED TO THE CORPS OF ENGINEERS

DECEMBER 17, 1987

S. 850 - RIO CHAMA WILD AND SCENIC RIVER LEGISLATION

1. I have suggested wild and scenic management by the Corps in cooperations with the BLM and Forest Service, on the bottom 5.7 miles of the proposed river. Do you see that as a workable approach?

The bottom 5.7 miles on the proposed river segment below elevation 6353 is already being managed by the Corps in conjunction with the Bureau of Land Management and the Forest Service. The approach is therefore workable SO LONG AS full authority for the use of the area below 6353 for the storage and release of water is vested solely in the Corps of Engineers. Under such an approach, there would be no constraints upon reservoir storage or releases as a result of wild and scenic management. With this stipulation, the river, as is now the case, could remain available for other uses and continue to be managed in a wild and scenic state in cooperation with BLM and Forest Service.

2.(a). The bill sets the bottom of the wild and scenic river at an elevation of 6283.5 feet, the elevation of a reservoir pool holding 554,580 acre-feet of water. Is it correct that such a level of storage could threaten the San Juan/Chama water owned by Albuquerque and others in the event of a standard project flood?

Yes, the San Juan-Chama water would not only be threatened in the event of a standard project flood, but also by smaller, more frequent floods.

(b). If this bill becomes law, what action would the Corps take regarding that 200,000 acre-feet of water in the event of a standard project flood?

There would be no change in operation of the project with respect to the 200,000 acre-feet if the bill became law. Under current operation and with passage of the bill, the 200,000 acre-feet of San Juan/Chama water stored in Abiquiu Reservoir would be pre-evacuated to provide space for the Standard Project Flood. Even for much smaller floods, some portion of the 200,000 acre-feet of San Juan-Chama water would have to be evacuated. For example, at any time the Corps predicts flood control storage needs in excess of 302,000 acre-feet, some portion of the 200,000 acre-feet is released. All of the San Juan-Chama water would be evacuated upon a prediction of flood control storage equal to or greater than 502,000 acre-feet (elevation 6283.5). since evacuation would be based on estimates, it is possible that some or all of San Juan-Chama water could be evacuated without the expected level of flood storage actually occurring.

Would you be forced to dump the water, which would flow downriver

for use in other states?

Yes, as is currently the case, this water would be released to the Rio Chama and on to the Rio Grande. If the conservation space in Elephant Butte and Caballo Reservoirs were full, this water would then be passed through to Texas. In any event, without independent agreements being reached between the owners of the released San Juan-Chama water and the holders of downstream Rio Grande water and storage rights, including the Rio Grande Compact Commission, the released San Juan-Chama water would be forever lost to its owners such as the City of Albuquerque as well as to the State of New Mexico. Depending on the conditions in the Rio Grande Basin, the water may no even be useful to Texas and could be lost altogether. The possibility also exists, depending on how much time was available to evacuate the water, that the evacuation might cause flooding problems downstream.

3. Much of the concern over this legislation involves the status of the 200,000 acre-feet of San Juan/Chama water. Is the law written so that the 200,000 acre-feet is within the flood control pool or is that authorized storage in addition to the flood control pool?

The Corps has interpreted the authorization for San Juan-Chama water storage in Abiquiu (PL 97-140) as providing for 200,000 acre-feet of storage in addition to flood control and sediment. This would require sufficient interests in real estate up to elevation 6308. However, neither the Corps of Engineers nor the owners of the imported San Juan-Chama water presently hold interests in real estate on private land above elevation 6293.5. Thus, Abiquiu Reservoir is currently operated with the San Juan-Chama storage in the flood space. Wild and scenic designation could prevent the needed real estate interests from ever being acquired.

4. Does the Corps see any difficulty to managing the Rio Chama as a wild and scenic river during periods where the space would not be needed for flood control or other purposes?

Managing the Rio Chama as wild and scenic during periods when space is not required for flood control or other purposes is practicable but would require some management effort. Because the Corps mission is flood control rather than specialized recreation and because the BLM and Forest Service will be managing the upstream reaches of the river, BLM and Forest Service would continue to oversee recreation on the lower reach including such activities as building and managing rafting facilities and patrolling the river.

5. Would you please discuss some of the problems for proper water management in the state of New Mexico if the Corps were limited, within the existing pool, to a strict interpretation of its authorization on temporary flood control storage?

Abiquiu is regulated according to the criteria defined in PL 86-645. These criteria prohibit the evacuation of stored flood water to Elephant Butte after July 1 if the natural flow at the Otowi gage on the Rio Grande is below 1,500 cubic feet per second. The Corps retains

flood water in storage in Abiquiu Reservoir when this prohibition applies, with releases of this water made after November 1. The requirement for carryover flood storage mandated by law is unusual. Flood control storage is normally not compromised by temporary storage of other water, but evacuated as quickly as possible. Because of this, some could say that under a strict interpretation of Corps flood storage policy, the carryover water should not be stored. This storage is however, required for effective management of water under the rio Grande Compact.

In addition, a strict interpretation of the use of temporary flood space could constrain the District Engineers' discretion to address interrelated flood problems downstream and throughout the Middle Rio Grande basin. Two prominent examples of operating situations in which the District Engineer's discretionary authority was used in the public interest are as follows: in 1985, additional water was held behind Abiquiu Dam to enable the Bureau of Reclamation to perform emergency repairs on a dike at Elephant Butte Dam that was threatened with structural failure; also in the same year an up to the present, water has been held in Abiquiu and other basin reservoirs to facilitate the maintenance of 50,000 acre-feet in Elephant Butte Reservoir as a temporary flood buffer to protect the communities of Truth or Consequences and Williamsburg. Both communities are susceptible to major flood damages in the event of a spill at Elephant Butte.

Finally, all of the flood control projects in the Rio Grande Basin must be managed as a system. This means flood water may be held in one reservoir to maintain flood space in another. Last year, water was held in Abiquiu because predictions indicated more space was required at Cochiti to prevent uncontrolled flows over the spillway. The District Engineer must have full authority to operate the system as a whole without constraints on any part of that system.

6. Abiquiu Reservoir may be the only place in New Mexico offering both cold water recreation fishing (trout) and warm water fishing (bass). Please describe the recreation demand at the reservoir. Do you have any estimates on the actual number of persons who annually get out onto the lake, as opposed to those who drive by? How does that compare with the recreational use of the river for rafting?

During the 5-year period 1983 through 1987, average annual recreation visitation at Abiquiu Dam was about 480,000 visitor days. This recreation is steadily rising. There were 542,000 visitor days through November 1987. Almost all of this visitation is based on fishing and lake boating. The New Mexico Statewide Comprehensive Outdoor Recreation Plan indicates a continuing need for this kind of recreation. The two-mile stream reach immediately below Abiquiu Dam also receives about 1,500 angler use days annually. By comparison, annual river floater (rafter and canoeist) use of the Rio Chama is about 3,000 visitor days of overnight use (launches from El Vado Ranch) and about 1,200 visitor days of day use (below the Benedictine Monastery). In addition to floating, short reaches of the Rio Chama from El Vado DAm to the upper end of Abiquiu Reservoir are used for such general recreation activities as fishing, biking, picnicking, photography, nature observation, and camping to the extent of about 4,400 recreation visitor days annually. However, since white water

boating on the Rio Chama is highly dependent on the availability of river flows, the opportunity for this activity has increased because of the recent abnormally wet years.

7. Unless the current law was changed, could a situation develop where the reservoir essentially dried up, either after the Corps dumped Albuquerque's 200,000 acre-feet of San Juan/Chama water or the owners of that water used up their storage at some future date? What is a reasonable size of an adequate recreation pool? Could you provide us with language that would assure an adequate recreation pool in the future, if the state or others provided the water?

Yes, Abiquiu could become essentially a dry reservoir if, under either of these two situations, the San Juan-Chama water was removed. However, the City of Albuquerque still receives approximately 45,000 acre-feet of San Juan-Chama water annually which could be used for approximately the next 30 years to refill the pool. After 30 years, the City of Albuquerque will gradually draw down the pool to compensate for their usage of groundwater. The reservoir will then become a dry reservoir.

A practicable, safe lake surface to provide for power boating would be about 3,000 surface acres. Under present sediment conditions and storage allocations, this corresponds to 100,000 acre-feet of water and a surface elevation of about 6,195.

Language to authorize such a pool is included below. Such language is provided as part of a legislative drafting service and does not constitute comments on the merits of the proposal. It is the policy of the Department of the Army to comment on the merits of legislation only in response to a request from the Chairman of the Committee to which legislation has been referred for consideration after clearance by the Office of Management and Budget.

> "The project for Abiquiu Dam and Reservoir, authorized by the Flood Control Act of 1948 (PL 858, 80th Congress), is modified to authorize 100,000 acre-feet of storage for recreation provided that the water required to fill and maintain such a pool is obtained by local interests."

8. The Corps is currently in litigation with Cochiti Pueblo over water on the pueblo's fields just below the dam. Senator Bingaman and I have joined in legislation to help. But one option, I believe, might be to store less water at Cochiti, moving some of that storage to another site. To what degree would Abiquiu serve as a potential flood storage site in lieu of Cochiti?

Abiquiu is essentially the only alternative site available for flood control storage above Cochiti Lake. It is true that if additional flood water were held at Abiquiu, less water would need to be stored in Cochiti, thereby reducing flood water levels behind the dam. This would reduce the amount of seepage under Cochiti Dam, but would not totally eliminate the problem. Abiquiu does not directly control flows in the Rio Grande, therefore Cochiti would still be required to control the much larger flows from the upper Rio Grande mainstem.

9. If a portion of the Rio Grande system water now stored at Elephant Butte Reservoir were stored at Abiquiu, would there be less evaporation? Does that make sense in terms of water conservation? What would be the benefits from the point of view of flood control for Truth or Consequences, N.M.?

Yes, the evaporation at Elephant Butte Reservoir is about 1.5 times that of Abiquiu. In terms of water conservation, Abiquiu is a much more efficient storage location.

A transfer of conservation space from Elephant Butte to Abiquiu, with the establishment of dedicated flood space in Elephant Butte, would provide flood protection for Truth or Consequences and Williamsburg. These benefits would be both physical and psychological since, at the present time, these communities have no permanent flood space in Elephant Butte to protect them from floods which may originate below Cochiti Lake.

10. The Albuquerque District Engineer has written to me saying that the latest surveys show that the mileage stated in the bill is inaccurate. Is that correct? If so, please provide us with appropriate conforming amendment language.

The mileage figure of 30.75 as given in the bill for the river mile distance between the El Vado launch site and elevation 6283.5 is not correct. Based on careful, detailed Corps analysis, the actual mileage figure is 28.9. The majority of the difference probably results from the distance between El Vado Dam and the launch site. The appropriate amendment language would be to substitute "28.9" for "30.75" in line 8 on page 2.

RIO CHAMA PRESERVATION TRUST

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December 18, 1987

Subcommittee on Public Lands, National Parks and Forests
Committee on Energy and Natural Resources
United States Senate
364 DSOB,
Washington, D.C. 20510

Dear People:

Enclosed please find a statement by Frederick Berry, a landowner on the Rio Chama in New Mexico.

Please accept this as part of the record of the Hearing held in your Subcommittee, December 17, 1987, on S.850/H.R.1839, a Bill to designate the Rio Chama Wild and Scenic River. This statement represents the views of both Mr. and Mrs. Berry and of the Rio Chama Preservation Trust. We hope that the Report of the Senate Committee can include the language proposed by Mr. Berry in the fourth full paragraph of his letter, or in any event language to that effect.

Thank you for your attention.

Very truly yours,

Phillip Wallin
Vice President

cc: Sen. Jeff Bingaman
Sen. Pete Domenici
Rep. Bill Richardson
Rep. Manuel Lujan

P.O. Box 2383 • Santa Fe, New Mexico 87504 • (505) 988-5922

FREDERICK A. F. BERRY
CONSULTING GEOLOGIST

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(505) 982-4149

December 8, 1987

Phil Wallin
Rio Chama Preservation Trust
P.O. Box 2383
Santa Fe, New Mexico 87504

Dear Phil,

My wife and I are greatly pleased with the legislative progress of the proposed Wild and Scenic River designation for the Rio Chama. As you know, we own the only working ranch in the immediate area of the Rio Chama that will receive this designation. There are certain real unfavorable impacts upon us by the proposed designation that have not yet been satisfactorily resolved.

Most of the access road on the southwest side of the Rio Chama that we use to get to our ranch traverses National Forest land. Almost all of this land falls within the land corridor adjacent to the Rio Chama that would receive Scenic River designation under the proposed Wild and Scenic River legislation. We have a Use Permit from the Santa Fe National Forest with respect to our road. We are charged by the Forest Service with the responsibility of maintaining and improving that road over the years so that it meets the Forest Service specifications. That takes time. We have essentially built that road from virtually nothing over a ten-year period. Road maintenance and improvement have been one of the most demanding and costly items in our ten-year stewardship of our ranch in Gallina Canyon. We have come a long way; we still have a considerable way to go.

There is one portion of that road which is essentially impassable at present if the spring runoff on the Rio Chama exceeds 4,200 cubic feet per second—which it usually does. There are other portions which are essentially impassable when they become muddy after any significant rain or a snowmelt; there is one very steep hill that is essentially impossible to climb in the winter during the day due to the steepness of the hill and the melting of ice that is always present at that site during the wintertime. Historically, there has been a ford across the Rio Chama that has been an additional important access route to our ranch in Gallina Canyon; this ford traverses land that now belongs to the Monastery of Christ in the Desert. We have an easement from the Monastery with respect to use of this ford. We are not able to use this ford-access route for those periods of time when the river is high and for a considerable time thereafter due to the boggy nature of the unconsolidated

silt-sand bottom prior to protracted settling. The week-end Rio Chama White-Water Release program from El Vado Dam for recreational boating virtually eliminates our use of the ford during the summer and well into the fall—thus increasing even more our dependency on our difficult access road on the southwest side of the Rio Chama. This White-Water Release program is related in a general manner to the proposed Wild and Scenic River designation for this portion of the Rio Chama. We are concerned that this legislation may at some time in the future deny us the right to make the improvements on our road that are now or may become necessary, even though such maintenance and improvement would be, as they are now, under the supervision of the Santa Fe National Forest. We do not have the money or the time to make all those necessary improvements prior to the initiation of the proposed Wild and Scenic River designation.

The language of the Report by the Committee on Interior and Insular Affairs of the U.S. House of Representatives on H.R. 1839 regarding traditional routes of access within the proposed Rio Chama Wild and Scenic River designation greatly alarms us. Their report states (p. 2, paragraph 3, lines 4 and 5 of the Section-By-Section Analysis) "...that traditional routes of access shall be maintained to the extent practicable." We wish this language to be changed in the forthcoming Senate report and any final report accompanying the legislation to read "...that traditional routes of access shall be maintained and improved where necessary to the extent practicable. Such work shall be under the supervision of the appropriate Federal agency on public lands. If traditional routes ever are closed, then substitute equivalent routes will be provided."

The ability to make necessary improvements, free from any possible prohibitive fetters that may come into existence by virtue of this proposed Wild and Scenic River designation, is essential for Forest Service Road 151, as well as for our own access road on the southwest side of the Rio Chama. This road is the takeout for all the Rio Chama boaters. The road becomes a river of mud after every rain. It is virtually destroyed by boaters if they are caught in such a situation; the boaters, in turn, are essentially unable to get to the highway under those circumstances except with extraordinary difficulty. The road construction by the boaters imposes a severe problem on those of us who must use this road in their regular life (ourselves, the Monastery, and grazing permit holders). Forest Service Road 151 should be made into a gravel, more weather-resistant road with responsibility and funds for its maintenance assigned to and assumed by some Federal, State, or county agency.

I hope that this letter demonstrates the reason for our great concern that the Senate Report on the proposed Rio Chama Wild and Scenic River designation contain language that will prevent possible future fetters on any road improvement as well as maintenance on land bearing a Rio Chama Scenic River designation. Unless language is included within the bill or the pertinent reports that specifically prevents such fetters and specifically provides for the development of alternative road routes should any given traditional access route be partially or completely closed, then we must and will oppose this bill. Do not misunderstand us, we are ardent supporters of this bill and the principles it represents. However, such legislation could prevent our ability to provide reasonable access to our ranch unless specific care is taken in the

Report language to provide for our needs. Already some of the traditional access to our ranch has been reduced by the elimination of our ford for a greatly extended time period by virtue of the White-Water Release program. Our very real needs must be taken care of in the national legislation now under consideration by the Senate and the House.

Sincerely,

Fred Berry